

COMPLIMENTS OF
AMERICAN WOOD WORKING MACHINE CO.

CATALOGUE No. 8235

American Wood Working Machine Co.,

Sales Department,

No. 133 Liberty Street,

New York, N. Y.

90
American Wood Working Machine Co.,

Sales Department,

No. 125 Liberty Street,

New York, N. Y.

ERNEST HART,
PRINTER,
ROCHESTER, N. Y.

American Wood Working Machine Co.

—• SUCCESSOR TO •—

F. H. CLEMENT CO.,	ROWLEY & HERMANCO CO.,	MILWAUKEE SANDER MFG. CO.,
GLEN COVE MACHINE CO.,	HOYT & BRO. CO.,	C. B. ROGERS & CO.,
GOODELL & WATERS,	LEHMAN MACHINE CO.,	THE LEVI HOUSTON CO.,
YOUNG BROS. CO.,	WILLIAMSPORT MACHINE CO.	

ILLUSTRATED CATALOGUE

— OF —

NEW AND IMPROVED WOOD WORKING MACHINERY.

OFFICES:

Washington Life Building, corner Broadway and Liberty Street,

NEW YORK CITY.

SALESROOMS:

109 Liberty Street, New York City.

94 Pearl Street, Boston, Mass.

43 and 45 S. Canal Street, Chicago, Ill.

Church and Basin Streets, Williamsport, Pa.

Cable Address: WOODMACHO.

FIRST EDITION, 1898.

INTRODUCTORY.



TO OUR PATRONS:

THE AMERICAN WOOD WORKING MACHINE COMPANY is composed of the following well known firms:

FRANK H. CLEMENT CO.	ROWLEY & HERMANCE CO.	MILWAUKEE SANDER MFG. CO.
GLEN COVE MACHINE CO.	HOYT & BRO. CO.	C. B. ROGERS & CO.
GOODELL & WATERS.	LEHMAN MACHINE CO.	THE LEVI HOUSTON CO.
YOUNG BROS. CO.	WILLIAMSPORT MACHINE CO.	

The lines of Machines found in the ensuing pages have been selected from the above named plants on account of their superiority over all other machines of their kind, as to their mechanical perfection and power to perform the work for which they are built.

This Company is not a Trust, and does not intend to make its money by inflating prices; all we want is a fair profit, and in return we give our customers the benefit of our consolidation, namely: economical manufacture, consolidated experience and a line so large to select from that our salesmen are able to give you an unbiased opinion as to the best machine or machines for your use.

We have not by any means established a standard, for our aim is to improve our machines to the extent that money and brains will bring them.

We have established Salesrooms at 109 Liberty Street, New York; 43 and 45 South Canal Street, Chicago, Ill.; 94 Pearl Street, Boston, Mass., and Church and Basin Streets, Williamsport, Pa. All sales communications should be addressed to our salesroom nearest to you, thus facilitating prompt attention and immediate interview by one of our salesmen when so desired.

Owing to the demand for a catalogue we have been obliged to compile this, our first issue, in a hurried manner, and desire to say that it does not represent our full line of machines. As soon as convenient we shall issue a complete catalogue comprising all of the various machines made by our separate Branches.

Thanking you for past favors and trusting for a continuance of your patronage, we remain

Very truly yours,

AMERICAN WOOD WORKING MACHINE CO.

AMERICAN WOOD-WORKING MACHINE CO.

PLEASE BE KIND ENOUGH to acknowledge receipt of this Catalogue by postal card or letter. If in want of any machine herein illustrated, please mention it, and we will quote you prices.

Suggestions to Correspondents.

To avoid mistakes, give your post-office address in full; TOWN, COUNTY AND STATE.

In ordering extras, repairs, supplies, or changes in machines being built, give sufficient information to enable us to fill the order intelligently and correctly.

When sending anything to us, put your name and address on each package.

Guess Work is Expensive.

Orders thoughtlessly or carelessly made are often received with instructions to hurry the goods forward. To avoid delay we must GUESS what is wanted, and we may guess wrong; then comes the inevitable expense of express charges, delay and consequent vexations at both ends of the line.

We will send EXACTLY what you want if you will state your wants EXACTLY.

In ordering gears give number of teeth, diameter, width of face, size of hole and length of hub. If a pulley, give diameter, face and hole, state whether straight or crown face; and if it is to run with another pulley (tight or loose), give projection of hub beyond the rim. If saws, always state whether rip or cross-cut, gauge, diameter of hole and number of teeth. In ordering mortise chisels, say whose make of mortiser they are for, or send an old chisel shank so we can get the proper taper. Orders for moulding bits should be accompanied with patterns, showing position and size of slots, as the spring of the bit depends upon the diameter of the cutting circle of the head. When ordering blanks for moulding bits, always give the length, as we do not know the thickness of moulding for which they will be shaped.

In ordering knives or moulding bits for our make of machines, state which machine they are for. If for other makes of machines, give diameter of head, and state whether the head is solid or slotted, the size, number and position of the slots. If possible, always send a paper pattern of the full size knife that can be used.

A LITTLE PENCIL SKETCH often conveys more meaning than a page of written instructions.

Many of our machines have been sold through agents, and only the agents' names are known to us in the transaction, hence the necessity of the greatest care in ordering.

A CAREFUL CONSIDERATION of the foregoing will save time and correspondence, and enable us to fill orders promptly.

Terms of Sale.

Strangers in ordering will facilitate shipment by sending reference.

All bills are due and subject to sight draft thirty days from date of shipment, unless other terms are agreed upon. Thirty days' time is extended to purchasers favorably rated in Commercial Reports.

CLAIMS FOR ERRORS must be made on receipt of goods. Our responsibility ceases upon delivery of shipment in good order to the Transportation Company, and in no case can we allow claims for damages or loss in transit. All claims *must* be made to the Transportation Company.

If in want of any kind of machinery for working wood, write us for prices before placing order. We will save you money, and give you the best the market affords.

Respectfully yours,

AMERICAN WOOD WORKING MACHINE COMPANY.

AMERICAN WOOD-WORKING MACHINE CO.

Cable Address, "Woodmacho."

GENERAL CODE.

A. B. C. Code Used Also.

CODE TABLE OF DATES.

CODE WORD.	DAY.
Dabbing	1st.
Dabbler	2d.
Dabchick	3d.
Dabovis	4th.
Dactillon	5th.
Dadais	6th.
Daddy	7th.
Daft	8th.
Dagger	9th.
Daglock	10th.
Dagorne	11th.
Dahlia	12th.
Daigner	13th.
Dainties	14th.
Daintily	15th.
Daintiness	16th.

CODE WORD.	MONTH.
Dancers	January.
Dandelion	February.
Dandified	March.
Dandler	April.
Dandruff	May.
Danewort	June.

CODE WORD.	DAY.
Daintre	17th.
Dairy	18th.
Dairymaid	19th.
Dairymen	20th.
Daisied	21st.
Dallage	22d.
Dallador	23d.
Dalliance	24th.
Dallying	25th.
Damask	26th.
Dame	27th.
Dameret	28th.
Damper	29th.
Dampness	30th.
Damsel	31st.

CODE WORD.	MONTH.
Dangerless	July.
Dangle	August.
Dausant	September.
Dapper	October.
Darder	November.
Dareful	December.

SHIPMENTS.

CODE WORD.	
Daring	Wire earliest possible shipment of.....
Daringness	How soon can you ship?
Darken	We can ship at once.
Darkling	Expect to ship.....
Darkness	Will ship.....
Darksome	Can ship.....
Darn	Can ship in three days.
Darning	Can ship in five days.
Dashing	Can ship in one week.
Dateless	Can ship in ten days.
Dative	Can ship in two weeks.
Daubing	Can ship in three weeks.
Daughter	Can ship in four weeks.
Dauntless	Can ship in five weeks.
Dauphin	Can ship in six weeks.
Dawning	Can ship in two months.
Daybook	Can ship in three months.
Daybreak	Ship by steamer from.....
Daydream	Ship by sailing vessel from.....
Daylight	Ship by steamer to.....
Daytime	Ship by sailing vessel to.....
Dazzle	Ship by railroad at once.
Dazzling	Ship by boat at once.
Deacon	Ship by express at once.
Deadish	Ship by express C. O. D.
Deadman	Shall we ship by steamer or sailing vessel?
Deafen	Shall we ship by rail or boat?
Dealer	Ship by sailing vessel from New York.
Dean	Ship by steamer from New York.
Deanery	Ship by cheapest route.
Deanship	Ship by railroad if not too great a difference in cost.
Dearling	Ship by fast freight.
Dearness	Ship by steamer and insure.
Deathless	Ship by sailing vessel and insure.
Deathlike	Ship as soon as possible.
Deathly	Ship immediately.
Deathwatch	Ship immediately, without waiting for car-load.

CODE WORD.	
Debark	Ship in carload.
Debarring	When and by what route did you ship?
Debased	Will a few days' delay in shipment make any difference?
Debasement	A few days' delay in shipment will make no difference.
Debatable	We have nearly finished and can ship.....
Debating	None in stock, but can ship in.....
Debel	Reply by telegraph when you can ship.
Debilement	When will you ship?
Debility	We ship to-day.
Debitage	Goods were shipped.
Debris	If you can ship at once, do so.
Debtor	We have shipped your order of.....
Debutant	We have not shipped.
Decadency	If you ship.....
Decalogue	Ship and draw with bill of lading attached.
Decameron	Can you ship and get through bill of lading?
Decamp	Will ship as soon as possible.
Decampment	Prepare to ship, but wait further instructions by mail.
Decanter	If you have not shipped, await further advice.
Decapage	..... goods are ready to ship and we await further instructions.
Decapitate	Shall we ship?
Decayed	Hurry shipment as much as possible.
Deceitful	If you have not shipped.....
Deceiver	Will be shipped this week.
Deceiving	Can ship at once.
Decency	Will be shipped next week.
Decently	When ready to ship, telegraph us.
Deception	Shipment can be made by.....
Deceptive	Send shipping directions.
Decevant	Shipment delayed by.....
Decimal	Car load.
Decharne	In one shipment.
Dechirage	Do not ship.
Decidence	If you have not shipped....., will send from here, answer.

INSURANCE.

CODE WORD.	
Deedless	Shall we insure?
Deemster	Do not insure.

CODE WORD.	
Deepness	You may insure.
Deerfold	Insure and let charges follow.

AMERICAN WOOD-WORKING MACHINE CO.

GENERAL CODE—Continued.

A. B. C. Code Used Also.

FREIGHT RATES, WEIGHTS, MEASUREMENTS AND HORSE POWER.

CODE WORD.

Defence	What is the best rate of freight you can obtain from your place to.....?
Defendable	Rate of freight per 100 pounds, in carload lots, from..... to..... is.....
Defendant	Rate of freight per 100 pounds, in carload lots released from..... to..... is.....
Defensive	Rate of freight per 100 pounds, in less than carload lots, from..... to..... is.....
Defensory	Rate of freight per 100 pounds, in less than carload lots released, from..... to..... is.....

CODE WORD

Defile	What is cubic feet and weight of.....?
Defilement	Cubic feet.....
Definable	What is shipping weight of.....?
Definative	Shipping weight is.....?
Definite	What is approximate gross weight?
Deflect	What is approximate gross weight of.....?
Deflecting	What is net weight of.....?
Deflexion	What is net and gross weight of.....?
Deflower	What horse power is required for.....?
Defluous	..... horse power is required to drive to full capacity.

PRICES.

CODE WORD.

Deftly	What is the lowest net cash price for.....?
Defunct	What is the lowest net cash price delivered here on.....?
Defying	The lowest net cash price on..... is.....
Degenerate	Wire lowest net cash price to us delivered here on.....
Degluer	Is price net, or list subject to discount?
Degollar	Price quoted you is net to us F. O. B. cars at.....

CODE WORD.

Degommage	Price quoted you is net to us F. O. B. cars at New York City.
Degonfler	Price quoted is net cash, boxed for export and delivered on cars at New York City.
Degout	Telegraph price on.....
Degoutant	Telegraph lowest price on.....
Degradant	Your price is too high.

SALES.

CODE WORD.

Deist	Sell at price that will net us not less than.....
Deistical	Do not sell unless you can get our price.
Dejected	Sell at price you name if you cannot do better.
Dejeuner	You may sell at.....
Delanteria	Sell at your discretion.
Delarder	Do not sell for less than.....
Delate	Cannot sell at.....
Delayant	Cannot sell at price you name, but can get.....
Delayement	Cannot sell at over.....

CODE WORD.

Deleatur	Have you sold?
Delasser	Have sold.
Delectable	Have not sold.
Delegated	Have sold and wish you to replace.....
Delestage	If you have not sold.
Deletory	All in the works are sold.
Delft	Will accept. Have written.
Delfinio	Will not accept. Have written.
Delgado	Cannot accept. Have written.

PAYMENTS, REFERENCES, ETC.

CODE WORD.

Demater	Have you remitted by mail?
Demeaning	Have remitted by mail.
Demeanour	Will remit at once.
Demediar	Draw at sight.
Demenage	Draw at sight Bill of Lading attached.
Demencey	Have drawn at three days' sight Bill of Lading attached.
Demented	Draw on us at.....
Demerit	Have drawn on you at sight.
Demeubler	Have drawn on you as usual.
Demise	Have drawn on you at sight with Bill of Lading attached.
Demisable	How shall we draw?
Demisory	Have remitted through.....
Democracy	Shall we draw at sight?
Democratic	Will draw on you as per proposition.
Demolish	Shall we draw on you?
Demolition	How much shall we draw for?
Demonian	Have you drawn?
Demonstrat	How have you drawn?
Demoralize	How much did you draw for?

CODE WORD.

Dempster	Have you remitted?
Demurely	Will you favor us with check in settlement of invoice.....?
Demureness	Will you favor us with check in settlement of balance?
Deniable	Remit without delay.
Denial	Have placed credit for.....dollars with.....
Denigrate	You may open credit in our favor with New York Bank for.....
Denization	Have opened Bank credit in your favor with.....
Denizen	Have mailed you Bankers' draft on New York for....., draw at sight against Bill of Lading for balance.
Denominate	Have mailed you Bankers' draft on London for....., draw at sight against Bill of Lading for balance.
Denotable	We refer to.....
Denoter	We refer to.....New York.
Denounce	Buy for me (or on our account) and hold for shipping instructions, as follows.....

AMERICAN WOOD-WORKING MACHINE CO.

A. B. C. Code Used Also.

GENERAL CODE—Continued.

TERMS AND DISCOUNTS.

CODE WORD.

Departing	What are your terms?
Department	Net cash with order.
Depayser	One-third with order, balance on shipment.
Depeccement	One-half with order, balance on shipment.
Depeche	One-third with order, draft at sight against Bill of Lading for balance.
Depectible	Draw at sight against Bill of Lading.
Depeindre	Notes with interest.
Dependency	Notes with interest secured by contract and insurance.
Depender	Notes with interest secured by chattel mortgage.
Depetrer	Notes with interest secured by good endorser.
Depict	We will allow you a discount of.....
Depiction	We will allow you an extra discount of.....
Depilage	Cannot make discount.
Depilatory	Cannot make an extra discount.
Deplaisant	Cannot make discount greater than.....
Deplantage	Can you make discount?
Depledge	Can you make an extra discount?
Depletion	What discount will you make us on.....?
Depolarize	1 per cent.
Deponet	2 per cent.
Deport	2½ per cent.
Deporting	3 per cent.
Depose	5 per cent.
Depository	10 per cent.
Depraved	15 per cent.
Depravity	20 per cent.

CODE WORD.

Deprecate	20 and 5 per cent.
Deprehend	25 per cent.
Depress	25 and 5 per cent.
Deprisant	25 and 10 per cent.
Depriver	30 per cent.
Depulsion	30 and 5 per cent.
Depurate	30 and 10 per cent.
Deputation	33½ per cent.
Deputy	35 per cent.
Derange	35 and 5 per cent.
Deranging	35 and 10 per cent.
Deray	40 per cent.
Deregler	40 and 5 per cent.
Derider	40 and 10 per cent.
Derisive	45 per cent.
Derition	50 per cent.
Derivative	50 and 5 per cent.
Dermal	50 and 10 per cent.
Derogate	55 per cent.
Derogatory	60 per cent.
Derouter	60 and 5 per cent.
Derribado	60 and 10 per cent.
Derrick	70 per cent.
Dervish	70 and 5 per cent.
Desabonner	70 and 10 per cent.
Desabor	75 per cent.
Desabrido	75 and 5 per cent.
Desadornar	75 and 10 per cent.
Desagrado	80 per cent.

TRACER.

CODE WORD.

Desolate	Goods not received. Send tracer.
Desolating	Follow with tracer.
Desolatory	Will send tracer immediately.

CODE WORD.

Desopilant	We have sent tracer.
Desormais	Send Tracer after.

GENERAL INSTRUCTIONS.

CODE WORD.

Despond	We will forward drawings and specifications.
Despondent	We have forwarded drawings and specifications.
Despot	Can you substitute?
Despotical	Can we substitute?
Despotism	You can substitute.
Dessale	What shall we do?
Dessert	What shall I do?
Dessouler	Follow up carefully.
Destinate	Look into the matter at once.
Destiny	Act quickly, but be judicious.
Destitute	Use caution regarding credit.
Destroyer	Find out if possible.
Destruct	As soon as.....
Desultory	As soon as you can.
Detach	As soon as we can.
Detaching	As soon as you get through at.....
Detachment	If nothing important in view, take train for.....
Detail	Waiting to see you.
Detallant	See them at once.
Detainder	Wire them immediately.
Detect	Have work here for to-day.
Detection	Must call on.....
Detergent	Must return to.....
Determent	Will leave to-night for.....
Detestable	Will leave to-morrow for.....
Detester	Will leave here immediately for.....
Detesting	Will leave immediately for.....and return here.

CODE WORD.

Detonate	Will Sunday at.....
Detonation	Will leave for.....
Detonize	Will be at.....
Detortion	Will Sunday here.....
Detouper	Will be here.....
Detour	Arrived here this morning.....
Detract	Arrived here this evening.
Detractive	Arrived here last night.
Detriment	Go at once to.....
Detrude	Call as soon as possible on.....
Devaler	Ask price on..... Machines.
Devast	is in the market for.....rated high.
Devestate	is in the market for.....rated fair.
Develop	is in the market for.....rated low.
Developing	is in the market for.....not rated.
Dvergence	Will get special rating.
Deviate	Will we get special rating?
Deviously	Come home at once.
Devisable	On your way home stop at.....
Deviser	Will be home.....
Deviation	Come home, stopping on your way at.....
Devoid	Stopping at important points, go at once to.....
Devolve	Telegraph when you leave.
Devorant	Send us your route and hotel list at once.
Devotedly	See route mailed.
Devotement	Will send route from.....
Devotion	Will mail route immediately.
Devourer	You will find letter or telegram of instructions at.....

AMERICAN WOOD-WORKING MACHINE CO.

GENERAL CODE—Continued.

A. B. C. Code Used Also.

GENERAL INSTRUCTIONS.

CODE WORD.

Devoutly Wire Instructions.
Devoutness Where can we reach you by letter?
Dewberry Please send instructions.
Dewdrop Sent you letter to-day to.....
Dewiness Sent you important letter to-day.
Dexter Sent you important letter on.....to.....
Dexterity Get our telegram at.....
Dexterous Get to-day's letter.
Dextral Get to-day's letter before calling on.....
Dextrality Get our letter at.....
Diabolical Get letter of instructions there.
Diacitron Shall I wait for letter and instructions?
Diaconal Where did you send it?
Diadem Will wait for instructions at.....
Diagnosis Have mail forwarded from.....
Diagonally Will get letter there.
Diagram Waiting your reply to our telegram.
Dial Please reply at once by telegram to ours of.....
Dialect Please reply at once to ours of.....
Dialogism In reply to your letter of.....
Dialogue In reply to your telegram of.....
Diaplate Must have definite reply.
Dialytic Reply by telegraph immediately.
Diamantino Reply by mail immediately.
Diameter Reply fully by mail immediately.
Diamond Immediate reply necessary.
Dianatic Did you receive our letter of.....?
Diaphorese Have not received letter referred to.....
Diapason Have not received your telegram referred to.....
Diarian Did you receive our telegram of.....
Diaper Have received your letter referred to.
Diaphanic Have received your telegram referred to.
Diaphragm If you have not.....
Diary Do not hold.
Diastole What is the amount?
Diathesis Your letter came to hand to-day.
Diatonic Our letter explains everything.
Dibble Have received your telegram of.....
Dibstone Your telegram did not reach us in time.
Dictate Your telegram is unintelligible, repeat it.
Dictation We mail you letter to-day, confirming this telegram.
Dictionary Owing to train connections, will.....
Didactic Await letter of this date.
Didler Waiting your further instructions.
Diedral Full instructions have been sent.
Dietary Shall we enter your order?
Dietetic If ordered at once.
Differ Wait further orders.
Differing Cancel our order of.....
Difficile Instructions to cancel arrived too late.
Diffidence We have order(s) on our books for.....
Difformity We advise you to send in the order immediately.
Diffract If ordered immediately.
Diffuse Wire orders.

CODE WORD.

Diffusive Contract to be closed.....
Digerent You can wire order at our expense.
Digest Have you on hand?
Digestible We have on hand.
Digestion Have none on hand.
Digging Competition is strong.
Digit If you cannot sell at our limit, telegraph best price you can get.
Dignified Can you get cash at these prices?
Dignitary Take the order.
Digression Have sold for immediate delivery.
Dilapidate Have sold for cash.
Dilatable Will you accept?
Dilate Shall I accept?
Dilation We will accept.
Dilemma Send draft account traveling expenses to.....
Diligent Send draft for.....dollars account salary to.....
Dilucid Have sent draft for.....dollars to.....
Dilution In accordance with your instructions.
Diluvial In accordance with our instructions.
Dimble Will make with extra charge.
Dimensive Will make for.....extra.
Diminish Our list price is.....
Diminutive Our list price for.....is.....
Dimity How soon can you furnish?
Dimness We will furnish.....
Dimpled Will this answer?
Dingdong Is it satisfactory?
Dinginess It is satisfactory.
Dinner It is not satisfactory.
Dintelar If satisfactory.
Diphthong Where can we reach you by letter?
Diploite Ignore telegram of.....
Diploma Proceed on route.
Diplomatic Ignore letter of instructions of.....
Dipping Repeat order of.....See page 5 in catalogue.
Diphtheria Your order of.....not understood. See page 5 in catalogue.
Directive If not over.....
Directory Write particulars.
Direful Do not trade.
Direness Will not trade.
Dirge Do not quote them.
Dirigent On receipt of our letter.....
Diriamant Nothing important.
Dirmir Cannot locate.....at.....
Dirtiness Give better address.
Disability Everything as usual.
Disabuse We will wire.
Disaffect Wire parties using.....here.
Disagree Wire parties using.....at.....
Disally Prepay freight to.....
Disarm Prepay freight to New York.
Disarray Prepay freight to Boston.
Disastrous Prepay freight to Chicago.
Disavow Use machine at store for.....
Disband Use.....at store for.....

AMERICAN WOOD-WORKING MACHINE CO.

A. B. C. Code Used Also.

GENERAL CODE—Continued.

FRACTIONS AND GENERAL FIGURES OR AMOUNTS.

WHICH MAY BE UNDERSTOOD AS DOLLARS, OR OTHERWISE, AS THE SENSE MAY REQUIRE.

CODE WORD.		CODE WORD.		CODE WORD.	
Disfavor.....	$\frac{1}{64}$	Dissilient.....	28	Docimacy.....	87
Disfigure.....	$\frac{1}{32}$	Dissipate.....	29	Docimastic.....	88
Disforest.....	$\frac{1}{16}$	Dissolute.....	30	Docket.....	89
Disgorge.....	$\frac{1}{8}$	Dissolvent.....	31	Dockleaf.....	90
Disgorging.....	$\frac{3}{16}$	Dissonant.....	32	Dockman.....	91
Disgrace.....	$\frac{1}{4}$	Dissuader.....	33	Docksill.....	92
Disgregate.....	$\frac{5}{16}$	Distaff.....	34	Dockyard.....	93
Disguise.....	$\frac{3}{8}$	Distance.....	35	Doctor.....	94
Disgust.....	$\frac{7}{16}$	Distastial.....	36	Doctrinal.....	95
Dishearten.....	$\frac{1}{2}$	Distaste.....	37	Dodger.....	96
Dishers.....	$\frac{9}{16}$	Distemper.....	38	Dodiner.....	97
Dishing.....	$\frac{5}{8}$	Distending.....	39	Dogaresse.....	98
Disincline.....	$\frac{11}{16}$	Distension.....	40	Dogberry.....	99
Disinherit.....	$\frac{3}{4}$	Distich.....	41	Dogfish.....	100
Disinter.....	$\frac{13}{16}$	Distiller.....	42	Doggerel.....	105
Disinthal.....	$\frac{7}{8}$	Distilling.....	43	Dogleech.....	110
Disjoint.....	$\frac{15}{16}$	Distortion.....	44	Dogna.....	115
Disliking.....	1	Distracted.....	45	Dogmatic.....	120
Dislocate.....	$1\frac{1}{16}$	Distrainer.....	46	Dogrose.....	125
Dislodge.....	$1\frac{1}{8}$	Distraught.....	47	Dogsmeat.....	130
Disloyal.....	$1\frac{3}{16}$	Distrayant.....	48	Dogstar.....	135
Dismally.....	$1\frac{1}{4}$	Distressed.....	49	Dogtrot.....	140
Dismalness.....	$1\frac{5}{16}$	Distribute.....	50	Dogwatch.....	145
Dismantle.....	$1\frac{3}{8}$	District.....	51	Dogwood.....	150
Dismay.....	$1\frac{7}{16}$	Distruber.....	52	Doigtier.....	155
Dismember.....	$1\frac{1}{2}$	Disturbing.....	53	Dolaire.....	160
Dismount.....	$1\frac{9}{16}$	Disuelto.....	54	Dolamas.....	165
Disoblige.....	$1\frac{5}{8}$	Ditch.....	55	Doleful.....	170
Disparage.....	$1\frac{11}{16}$	Ditching.....	56	Dolencia.....	175
Disparity.....	$1\frac{3}{4}$	Ditchman.....	57	Dolesome.....	180
Dispel.....	$1\frac{13}{16}$	Ditirambo.....	58	Doliman.....	185
Dispelling.....	$1\frac{7}{8}$	Ditty.....	59	Dolly.....	190
Dispensary.....	$1\frac{15}{16}$	Diuretic.....	60	Dolomite.....	195
Dispensing.....	2	Diurnally.....	61	Dolorific.....	200
Disperge.....	3	Divagante.....	62	Dolorous.....	205
Dispersion.....	4	Divan.....	63	Dolphin.....	210
Displant.....	5	Divarique.....	64	Doltish.....	215
Display.....	6	Divergent.....	65	Domadura.....	220
Displaying.....	7	Diversely.....	66	Domain.....	225
Disponge.....	8	Diversion.....	67	Domanial.....	230
Disproof.....	9	Divesture.....	68	Domed.....	235
Disprove.....	10	Dividable.....	69	Domestic.....	240
Dispuesto.....	11	Dividuous.....	70	Domicile.....	245
Disputant.....	12	Divination.....	71	Dominant.....	250
Disputer.....	13	Divinemant.....	72	Domineer.....	255
Disqualify.....	14	Diviner.....	73	Dominical.....	260
Disque.....	15	Divisional.....	74	Dominion.....	265
Disquiet.....	16	Divorce.....	75	Dompteur.....	270
Disregard.....	17	Divorcible.....	76	Donary.....	275
Disrepute.....	18	Divorcing.....	77	Donatario.....	280
Disrespect.....	19	Divulgate.....	78	Donation.....	285
Disrobe.....	20	Divulger.....	79	Donatista.....	290
Disrobing.....	21	Divulsion.....	80	Doncella.....	295
Disruption.....	22	Dizenier.....	81	Donneur.....	300
Dissect.....	23	Dizziness.....	82	Donosidad.....	305
Dissection.....	24	Doatingly.....	83	Donship.....	310
Dissembler.....	25	Doblado.....	84	Donzelle.....	315
Dissenter.....	26	Docile.....	85	Doomsday.....	320
Dissidence.....	27	Docility.....	86	Doorkeeper.....	325

AMERICAN WOOD-WORKING MACHINE CO.

GENERAL CODE—Continued.

A. B. C. Code Used Also.

FRACTIONS AND GENERAL FIGURES OR AMOUNTS.

WHICH MAY BE UNDERSTOOD AS DOLLARS, OR OTHERWISE, AS THE SENSE MAY REQUIRE.

CODE WORD.	
Doorsill	330
Doradilla	335
Doremal	340
Dorian	345
Dorical	350
Dorloter	355
Dormant	360
Dormidera	365
Dormirlas	370
Dormitory	375
Dormouse	380
Doronic	385
Dorsifero	390
Dotage	395
Dotardly	400
Dotingly	405
Dotterel	410
Doublet	415
Doubtfully	420
Doucement	425
Douceur	430
Doughy	435
Dovecot	440
Dovelike	445
Dovetail	450
Dowager	455
Dowdyish	460
Dowered	465
Dowerless	470
Downcast	475
Downpour	480
Downward	485
Downy	490
Dowress	495
Doxology	500
Dozing	505
Drabbish	510
Dracontic	515
Drafted	520
Drabble	525
Dragon	530
Dragonade	535
Dragonfly	540
Dragsman	545
Drain	550
Drainage	555

CODE WORD.	
Dram	560
Dramatical	565
Dramatist	570
Draper	575
Drastic	580
Drawback	585
Drawbridge	590
Drawl	600
Drayage	610
Drawish	620
Drayman	630
Dreader	640
Dream	650
Dreaming	660
Dreamless	670
Dreary	680
Dredger	690
Drench	700
Dres	710
Dresser	720
Dressing	730
Dribblet	740
Drilling	750
Drinker	760
Driveller	770
Driving	780
Drizzly	790
Droll	800
Drollery	825
Dromedary	850
Dronish	875
Drooping	900
Droplet	925
Dropsical	950
Dropsy	975
Drosometer	1000
Dross	1025
Drossiness	1050
Drowsy	1075
Druggery	1100
Druggist	1150
Druid	1200
Druidical	1250
Drumhead	1300
Drummer	1350

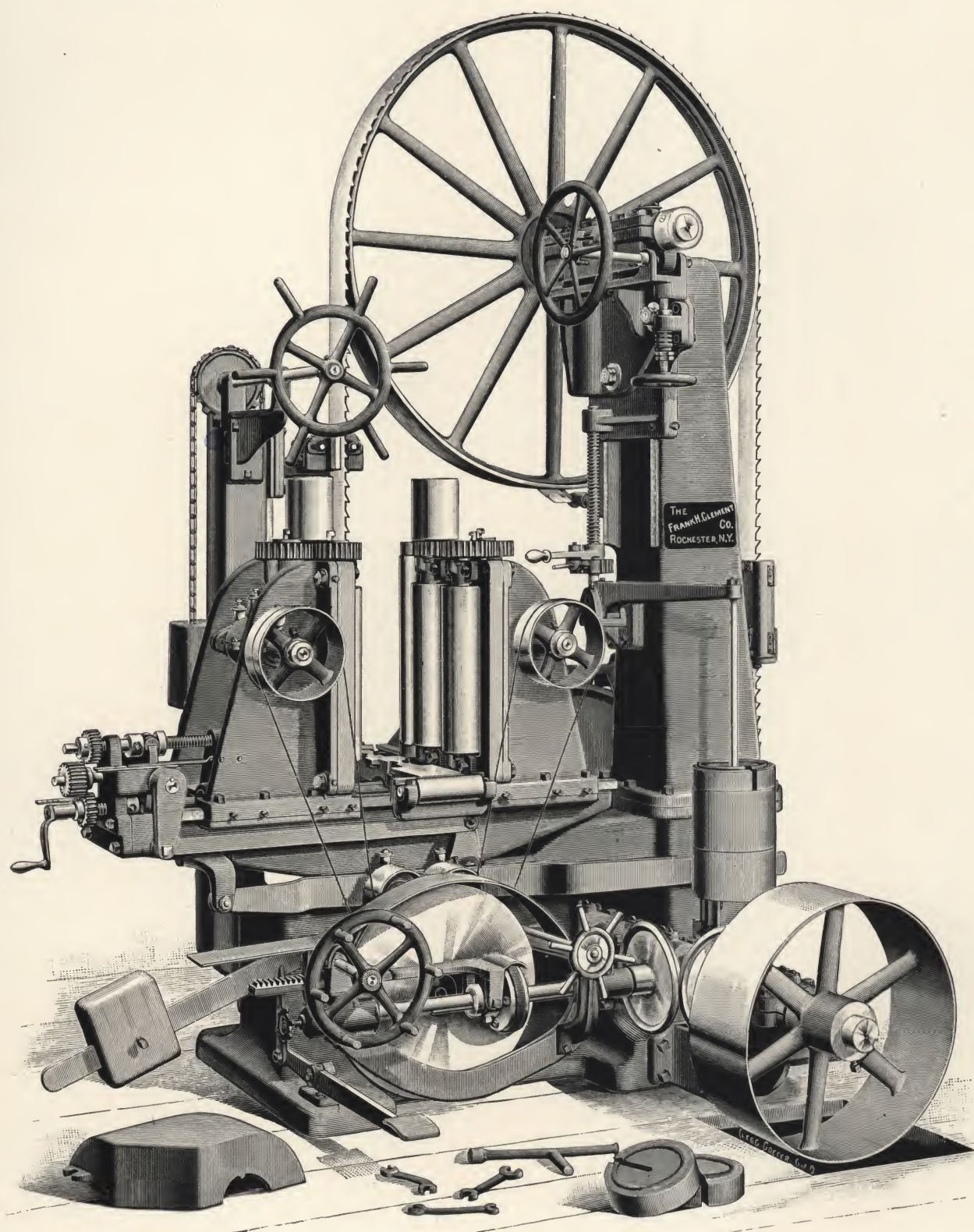
CODE WORD.	
Drumstick	1400
Drying	1450
Dryness	1500
Dualism	1550
Dubiate	1600
Dubious	1650
Dubitation	1700
Ducado	1800
Ducal	1900
Duchess	2000
Duckling	2250
Duckpond	2500
Duckweed	2750
Ductile	3000
Ductility	3250
Dudgeon	3500
Dueller	3750
Duet	4000
Dukedom	4500
Dulcamara	5000
Dulcet	5500
Dulcifier	6000
Dulcimer	6500
Dullard	7000
Dulness	7500
Dumbly	8000
Dumfound	8500
Dumbness	9000
Dummy	9500
Dumpish	10000
Dumpling	11000
Dunce	12000
Duncify	13000
Dundiver	14000
Dungeon	15000
Dinner	16000
Dupe	17000
Duplex	18000
Duplicate	19000
Duplicity	20000
Durable	21000
Duramen	22000
Duration	23000
Dureless	24000
Durillon	25000

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 1.

F. H. CLEMENT CO.'S

New 54-Inch Band Re-Sawing Machine.



AMERICAN WOOD-WORKING MACHINE CO.

Fig. 1.

F. H. CLEMENT CO.'S

New 54-Inch Band Re-Sawing Machine.

THE PERFECTION OF DESIGN AND WORKMANSHIP.

THIS machine will be found on examination to be a long step in advance of any tool of its kind yet produced in the way of simplicity and directness of action, and elegance and adaptability of design. It embodies all the conveniences and attachments that are necessary or desirable for any kind of re-sawing in hard or soft wood, and it has ample power both on the blade and in the feed works for any reasonable demand; at the same time the cost has been kept below that of other machines that have far less merit.

The Frame is cast hollow with cross struts and heavy foot flanges, and it has a broad base which when properly set does not permit vibration of the machine when running.

The Shafts are of hammered crucible steel, and the lower one is $3\frac{1}{2}$ inches diameter, having three bearings, each 12 inches long, with automatic oiling cells and return channels. The main upper bearing is also 12 inches in length with similar self-oiling attachments.

The Wheels are of a form and dimensions which have been found correct in experience, and they are both "dished" so as to extend over the boxes, thereby bringing the strain of the blade directly on the bearings. The lower wheel is very heavy, with a solid central web, and the upper one is as light as possible consistent with strength.

The Feed Works are driven by friction gearing, which is adjustable to vary the feed from 18 feet to 100 lineal feet per minute, and the arrangement is the most simple possible, every adjustable part being within easy reach of the operator at his post. The rolls are driven by bronze spur gears and steel worms with ball end-bearings, and the motion is perfectly smooth and noiseless even at the fastest speed.

Six Feed Rolls carry the stock to the saw, four of them being 5 inches diameter and driven by gearing, and two of them solid steel idle guide-rolls close to the saw. The right hand set of rolls are rigid in their boxes, but the left hand set are elastic so as to grasp uneven stock and hold it fairly up against the rigid rolls, thus making a powerful feed even on very unequally sawed lumber. The rolls tilt to an angle to saw clapboards and the forward pair can be fluted if so ordered.

The Self-Centering Attachment is so arranged that by slacking a set screw and adjusting a collar, the right hand rolls become rigid, but may be adjusted to thickness by the lower screw and hand crank.

The Straining of the Blade is accomplished by a balance lever with weights which may be changed according to the work and width of the saw. There is also a cushioned connection between the tilting screw and upper box, permitting sufficient elasticity for the protection of the blade.

The Guides have large hardened steel rear or safety rollers and independent side guides which are adjustable by screws. The lower guide forms a work table for the lumber passing through, and the upper one adjusts to receive stock 30 inches wide and is counter-balanced and adjusted vertically by a large pilot wheel or by a lever and bar overhead as desired; thus the guide can be instantaneously shifted as the lumber varies in width.

The Capacity of the machine is 30 inches wide (or deep) and to the center of 16 inches between the rolls, or stock 8 inches thick can be "slabbed off" $\frac{1}{8}$ inch and thicker, by setting the right hand rolls rigid. Dry pine or similar soft woods 10 inches wide or less has been sawed on this machine at 75 to 85 lineal feet per minute, or at the rate of 48,000 surface feet per day; and the same kind of stock 12 to 16 inches wide has been cut at 60 to 70 feet per minute, or at the rate of 52,000 surface feet per day. For kiln dried hard woods the speed of feed will necessarily be much less.

Blades 5 inches wide and under can be used, 18 to 22 gauge thick. We recommend blades 5 inches wide and No. 19 gauge, and we send one blade complete, ready for sawing, with each machine.

The Driving Pulleys are $24 \times 8\frac{1}{2}$ inches, and the loose pulley is 1 inch smaller than the tight and has a self-oiling detachable bush, lined with genuine babbitt. They should run 500 to 550 per minute. The machines are shipped crated and taken apart as far as possible, and we furnish ample directions for setting and operating with necessary floor plans. The engraving shows only the driving pulley, designed to be used with a tightener, but we furnish loose pulley without extra charge.

The Workmanship is superior to that of any other machine of its kind now made, and we shall be glad to show any prospective buyer our methods.


 In place of the pilot wheel and shaft for adjusting the upper guides, we can furnish when wanted a T lever attachment to be hung from the ceiling, which is used with a horizontal shifting bar extending back within reach of the operator.

Fig. 1.—Complete, 54-inch Band Re-Sawing Machine.....

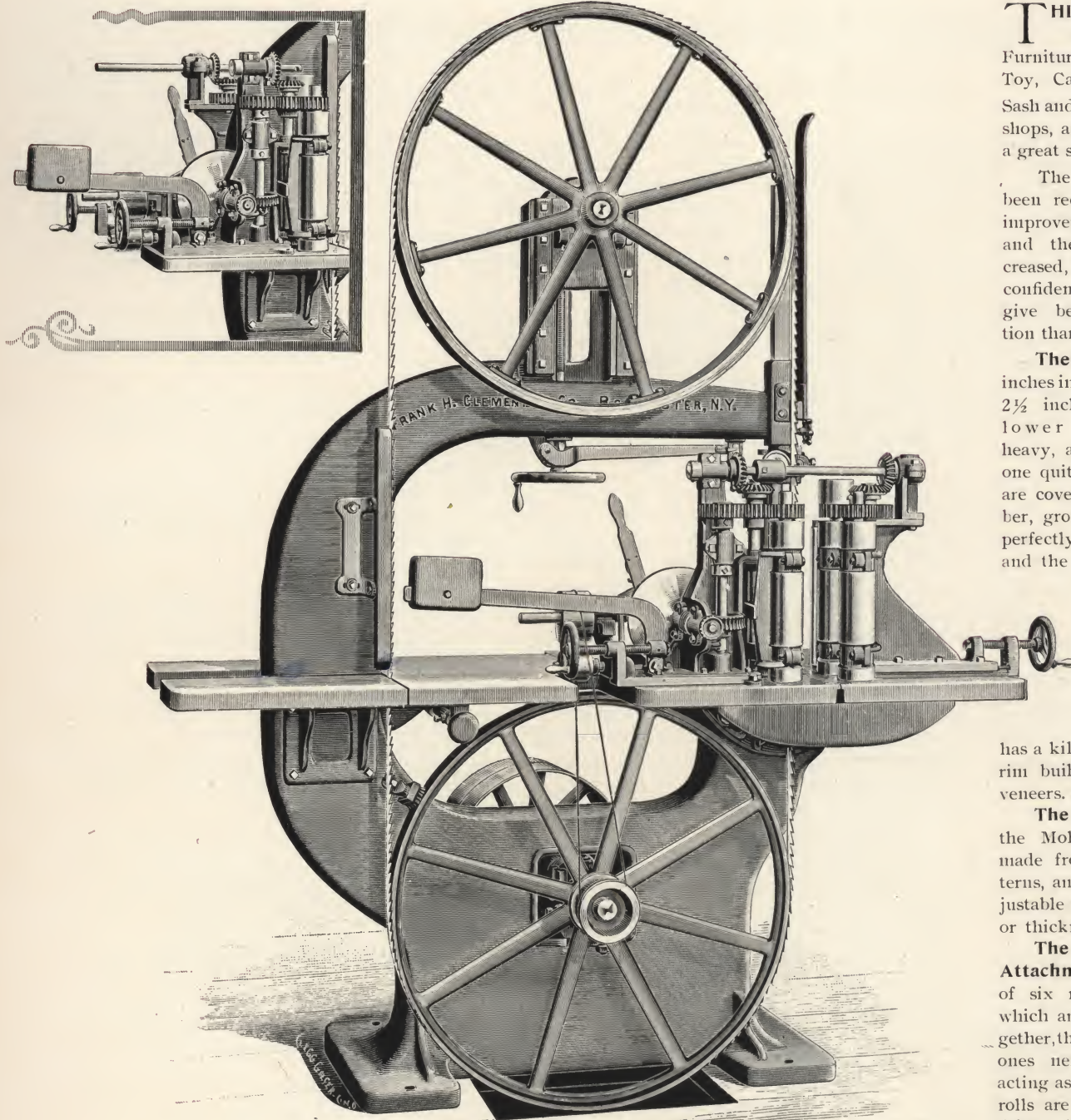
Weight.
7,200 lbs.

Code Word.
Fabago.

Fig. 2.

F. H. CLEMENT CO.'S

42-Inch Combined Scroll and Re-Sawing Machine.



THIS Machine is designed for Furniture, Carriage, Toy, Carpenter, Box, Sash and Door and Job shops, and has proved a great success.

The patterns have been recently rebuilt, improvements added, and the weight increased, and we feel confident that it will give better satisfaction than ever.

The Wheels are 42 inches in diameter and $2\frac{1}{2}$ inches face, the lower one being heavy, and the upper one quite light; they are covered with rubber, ground true and perfectly balanced, and the upper wheel

has a kiln dried wood rim built up of thin veneers.

The Guides are the Mohawk patent, made from our patterns, and they are adjustable to any width or thickness of blade.

The Re-Sawing Attachment consists of six rolls, four of which are geared together, the two smaller ones next the saw acting as guides. The rolls are strongly driven by a friction wheel and disk, by

means of which the speed may be instantly varied from 10 to 30 lineal feet per minute, or stopped altogether by a convenient hand lever. All the parts of the feed works, including the driving belt are immediately within the operator's reach.

The Table is of iron, and is trussed underneath so as to prevent springing, and it can be tilted to cut weather boards, etc.

The Feed Works take lumber to 16 inches wide (or deep) and 4 inches thick, so as to cut at the center or any point out of the center and they will cut to the center of $7\frac{1}{2}$ inches. Two panels, each $\frac{3}{8}$ inch thick when planed on both sides can usually be got out of the average 1 inch stuff, or 5 pieces plump $\frac{1}{8}$ inch thick not planed. The whole may be removed from the table in one to three minutes for scroll sawing, the parts being supported by the bracket tables as shown in the small engraving.

There is a third bearing outside the driving pulleys and a floor stand for the same.

The Tight and Loose Pulleys are 20 x 6 inches, and should run about 500 per minute.

Blades.—One 2-inch special blade and one $\frac{1}{2}$ inch or $\frac{3}{8}$ inch, are usually furnished with the machine, joined, filed and set so that everything is ready for the belts.

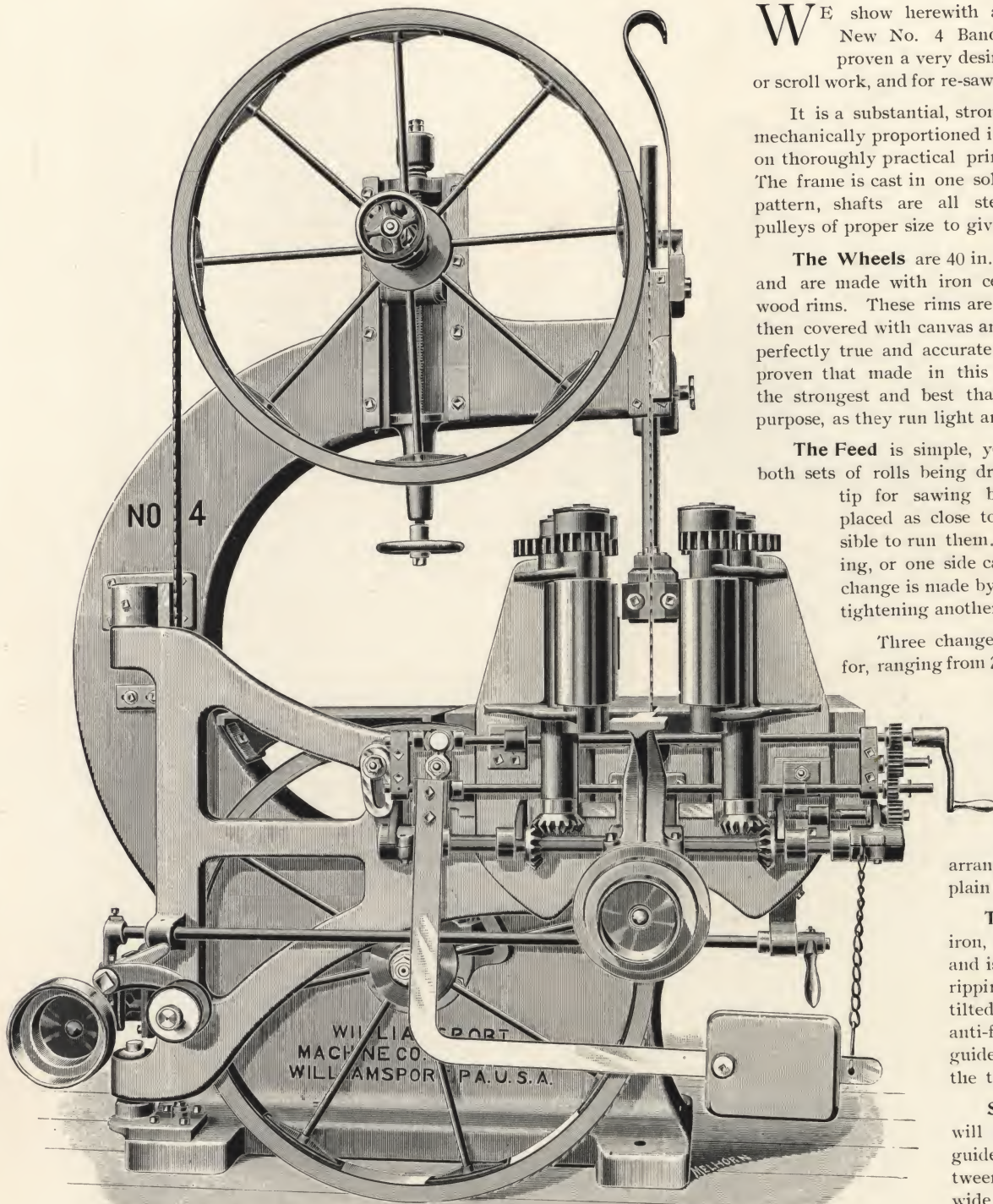
Fig. 2.—Complete, 42-inch Scroll and Re-Sawing Machine.....	Required H. P. 2 to 5	Weight. 2,900 lbs.	Code Word. Fable.
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AMERICAN WOOD-WORKING MACHINE CO.

Fig. 3.

WILLIAMSPORT MACHINE CO.'S

New No. 4, 40-Inch Band Re-Saw.



WE show herewith an illustration of our New No. 4 Band Re-saw, which has proven a very desirable machine for band or scroll work, and for re-sawing within its capacity.

It is a substantial, strong and rigid machine, mechanically proportioned in every way, and built on thoroughly practical principles in every detail. The frame is cast in one solid piece, cored section pattern, shafts are all steel, extra heavy, and pulleys of proper size to give sufficient belt power.

The Wheels are 40 in. diameter, $2\frac{1}{2}$ in. face, and are made with iron centers and spokes and wood rims. These rims are glued up in cants and then covered with canvas and pure rubber, turned perfectly true and accurate. Our experience has proven that made in this way these wheels are the strongest and best that can be made for the purpose, as they run light and steady.

The Feed is simple, yet strong and reliable, both sets of rolls being driven. These rolls will tip for sawing bevel siding, and are placed as close to the saw as it is possible to run them. They are self-centering, or one side can be made rigid. The change is made by loosening one bolt and tightening another.

Three changes of feed are provided for, ranging from 20 to 42 feet per minute.

The re-sawing attachment is on a swinging arm, and by loosening but one clamp bolt the feed works can be swung around out of the way and the table slid up to its place, arranging the machine for plain or scroll work.

The Table is made of iron, 34 in. by 42 in. in size, and is fitted with a guide for ripping. The table can be tilted if desired. We put an anti-friction patent roller guide both above and below the table on this machine.

Stock up to 18 in. thick will pass under the upper guide, and to 6 in. thick between the rolls. Saws as wide as $2\frac{1}{2}$ in. can be used on the machine. With each machine we send one saw

each, $2\frac{1}{2}$ in. wide and $\frac{1}{2}$ in. wide, ripping gauge for hand work, brazing clamp and tongs, belt shifter and full set of wrenches.

The Tight and Loose Pulleys are 18 x 6 in. and should make 600 revolutions per minute.

Floor space required over all, 7 ft. x 6 ft. Height of machine from floor to extreme top, 9 ft.

Fig. 3.—Complete, 40-inch Band Re-saw.....

Weight.
3,500 lbs.

Code Word.
Fabric.

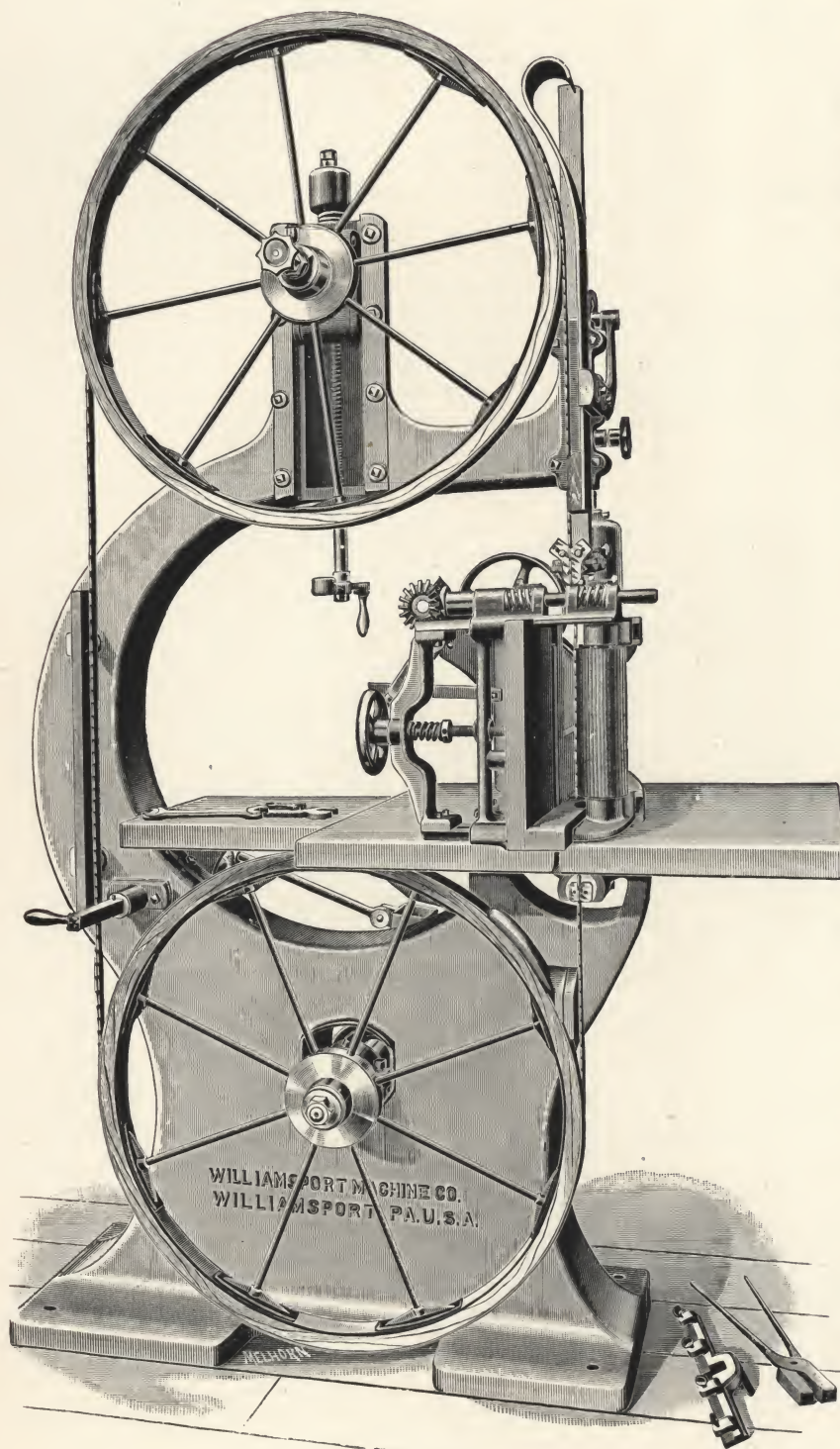
AMERICAN WOOD-WORKING MACHINE CO.

Fig. 4.

WILLIAMSPORT MACHINE CO.'S

New 38-inch Wheel Band Saw.

WITH RE-SAWING ATTACHMENT.



THIS is a newly designed machine brought out by us, having all the adjustments and attachments necessary on a first-class machine of this kind.

The Frame is hollow and cast solid in one piece, carefully designed with reference to strength and weight. The base is much larger than any other make of machine of similar kind.

The Wheels are 38 inches in diameter and $2\frac{1}{4}$ inch face, and are made with iron centers, steel spokes and wood rims, made from thin veneers, which make a far better wheel than bent rims in every respect, as it is almost impossible to keep bent rims true. The covering on the wheels is made of the best of rubber, and the surface turned perfectly true. The top wheel is hung in a swinging frame and can be adjusted by the hand wheel shown in the cut at center of wheel, for regulating the path of the saw and pressure on the guides.

The Shafts are steel, large in diameter and run in long bearings, lined with the best of babbitt metal.

The Table is iron, 36 inches square, planed perfectly true, and can be adjusted to saw beveling. The guide bar is steel, made perfectly square and counterbalanced for convenience in adjusting, and to prevent accident by falling when loosened. We use the spring tension on all our different sized band saws to compensate for the expansion or contraction of the blades, as we have found this device to be more satisfactory than weights and levers.

The Feed works for re-sawing are simple and strong, both rolls being driven by use of steel worm and brass worm wheel. This attachment will take through stock up to 12 inches wide by 3 inches thick. By tilting the table, bevel siding can be made. The re-sawing attachment can be removed from the machine by simply loosening two bolts, leaving the machine one of the very best for ordinary band sawing.

We furnish the Mohawk Dutchman patent guide on this machine, as we consider it the most practical guide now in use.

The machine will take in 19 inches under the guide, and 36 inches between the saw and frame.

The Tight and Loose Pulleys are $14 \times 4\frac{1}{2}$ inches, and should run 500 revolutions per minute. Floor space required, 20×48 inches.

We furnish with every machine one $\frac{1}{2}$ -inch blade, scarfing frame, soldering tongs, belt shifter, ripping guide and set of wrenches, and with the re-sawing attachment a 2-inch saw blade for re-sawing.

Weight.
2,000 lbs.

Code Word.
Facade.

Fig. 4—Complete, 38-inch Band Saw, with Re-Sawing Attachment.....

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 5.

F. H. CLEMENT CO.'S

42-Inch Scroll Band Saw Machine.

THIS Machine is made from a new and greatly improved set of patterns and is intended for the heavier grades of scroll sawing, such as chair backs, plow beams, wagon work, millwright work, etc., but is equally practical for light sawing, using blades from $\frac{3}{16}$ inch wide, upward. It is carefully designed, heavy and powerful, having cored frame cast in one piece, extra heavy steel shafts, long bearings and large pulleys.

The Wheels are 42 inches in diameter and $2\frac{1}{2}$ inches face, the lower one being heavy, and the upper one quite light; they are covered with rubber, ground true and perfectly balanced, and the upper wheel has a kiln dried wood rim built up of thin veneers.

The Upper Guide is the Mohawk patent, made from our patterns, and the lower guide has a self-adjusting back plate and wood side guides. The guide spindle is of steel square in section and counter-balanced.

The Table is of iron or wood as ordered, secured to a strong segment bar, by means of which it can be tilted to an angle for beveled sawing.

The Shafts are of extra hammered steel, and the boxes of both are adjustable for alignment, and are arranged to take up wear. There is a third bearing on the driving shaft outside of the pulleys.

Our Patent Straining Lever is applied to this size also.

A Wide Splitting Gauge and pressure roll are furnished as an extra, when ordered, for re-sawing by hand feed. We furnish with each machine, wrench, scarfing-frame, tongs, one blade ready for use, and crate the machine carefully and deliver it at freight depot here without charge.

The tight and loose pulleys are $18 \times 5\frac{1}{4}$ in., and they should run about 350 per minute. Two to four horse power will be required. Sawing space, 42 inches wide and 20 inches deep. The workmanship is first-class.

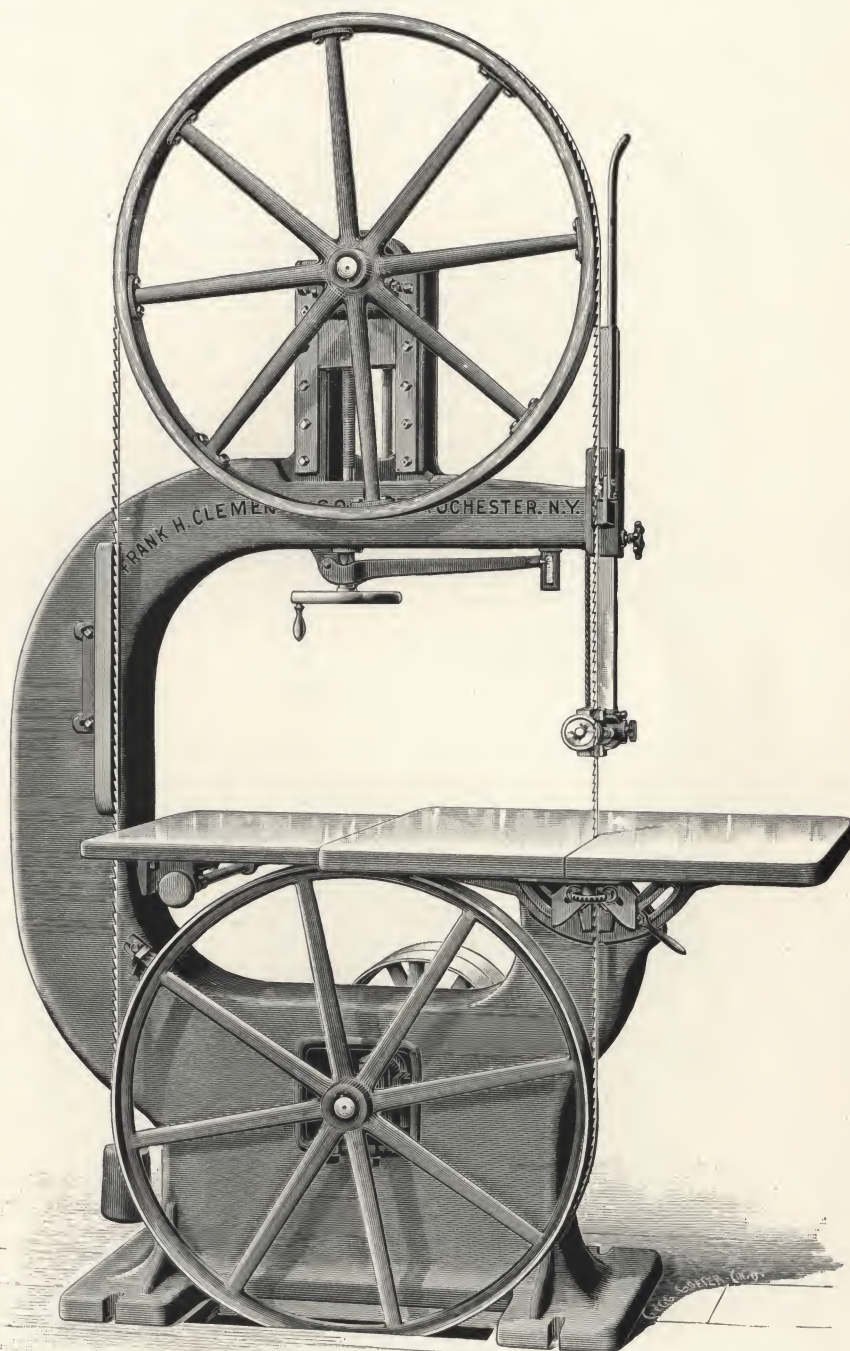


Fig. 5.—Complete, with Wood Table.....

Fig. 5 A.—Complete, with Iron Table.....

Fig. 5 B.—Hand Splitting Gauge and Roller.....

Weight.
2,000
to
2,200 } lbs.

Code Word.
Facial.

Faciliter.

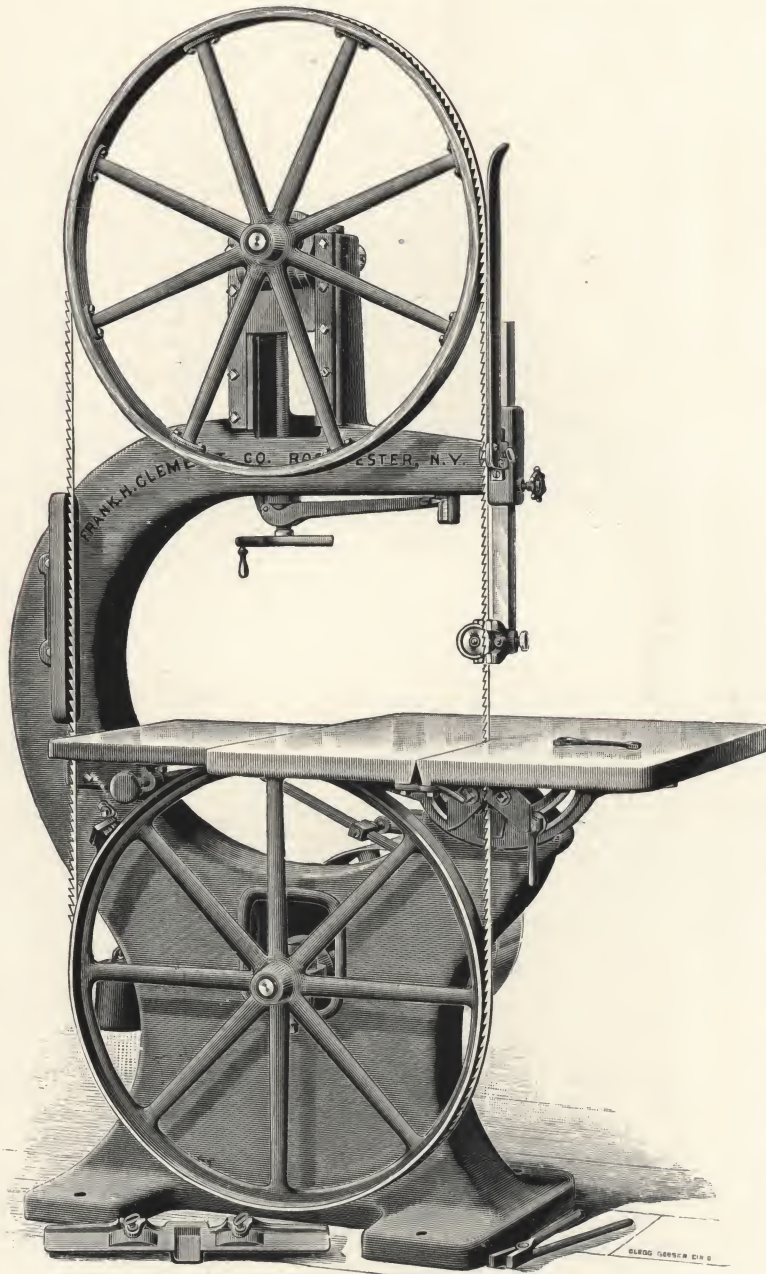
Facteur.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 6.

F. H. CLEMENT CO.'S

Improved 38-inch Band Saw Machine.



THIS is a new pattern just brought out by us, and it has all the adjustments and attachments necessary on a first-class tool of this kind.

The Frame is hollow and cast in one piece and is carefully designed with reference to strength and weight; the base is much broader than other machines of similar character.

The Upper Wheel is light but strong, being composed of a rigid center piece and a hardwood rim built up of thin kiln-dried veneers without cross joints. It is, therefore, practically a continuous rim, and will remain true in use, which cannot be said of a cheap bent rim. The lower wheel is all iron and reasonably heavy; this we have found by long experience to be correct practice, as it gives a steadier motion to the blade. For heavy work, requiring wide blades, we make both wheels of iron.

The Shafts are of steel, and have extra long high grade babbitt metal bearings. The boxes of both shafts are adjustable for alignment and for shifting the blade, and are all divided and arranged to take up wear.

The Patent Weighing Strain for the upper wheel is always elastic, thus avoiding a serious difficulty in counter-weighted strains, which are too rigid and inert for light blades.

The Table is generally of kiln-dried cherry, glued up in strips, but of iron when ordered; it is bolted to a heavy segment bar extending across it, planed true on all bearings, and arranged to tilt to an angle and clamp without the use of a wrench.

The Guide Post is of steel, square in section, and is suitably counterbalanced.

Mohawk Patent Guide, made from special patterns, is supplied on every machine; for various reasons this is the most satisfactory guide yet introduced, and will save a great many breakages of the blade if properly cared for.

A Wide Splitting Gauge and pressure roll are furnished as an extra, when ordered, for re-sawing by hand feed. We furnish with each machine, wrench, scarfing frame, tongs, one blade ready for use, and crate the machine carefully and deliver it at freight depot here without charge. The tight and loose pulleys are 16 x 5¼ inches, and they should run about 375 per minute. Two to four horse power will be required. Sawing space, 37 inches wide and 16 inches deep. The workmanship and materials are first-class.

Fig. 6 —Complete, Wood Table and One Blade.....	Weight.	Code Word.
Fig. 6 A— “ “ “ “ “ “	1,400 to	Faction.
Fig. 6 B—Hand Splitting Gauge and Roller.....	1,600 lbs. }	Factorage.
		Factory.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 7.

WILLIAMSPORT MACHINE CO.'S

New No. 5, 37-Inch Wheel Band Saw.

THIS is a newly designed machine brought out by us, having all the adjustments and attachments necessary on a first-class machine of this kind.

The Frame is hollow and cast solid in one piece, carefully designed with reference to strength and weight. The base is much larger than any other make of machine of similar kind.

The Wheels are 37 inches in diameter and 2-inch face, and are made with iron centers and spokes and wood rims, which makes a far better wheel in every respect than solid iron. The covering on the wheels is made of the best of rubber, and the surface turned perfectly true. The top wheel is hung in a swinging frame, and can be adjusted by the hand-wheel shown in the cut at center of wheel, when machine is in motion, for regulating the path of the saw and pressure on the guides.

The Shafts are steel, large in diameter, and run in long bearings, lined with the best of babbitt metal.

The Table is iron, 34 x 31 inches, planed perfectly true, and can be adjusted to saw beveling.

The Guide-bar is steel, made perfectly square, and counterbalanced for convenience in adjusting and to prevent accident by falling when loosened. We use the spring tension on all our different size band saws to compensate for the expansion or contraction of the blades, as we have found this device to be more satisfactory than weights and levers.

We furnish the Mohawk Patent Guide on this machine, as we consider it the most practical guide now in use.

The machine will take in 15 inches under the guide, and 35 inches between the saw and frame.

The Tight and Loose Pulleys are 14 x 4½ inches, and should run 500 revolutions per minute. Floor space required, 18 x 41 inches.

We furnish with every machine one ½-inch blade, scarfing frame, soldering tongs, belt shifter, ripping guide and set of wrenches.

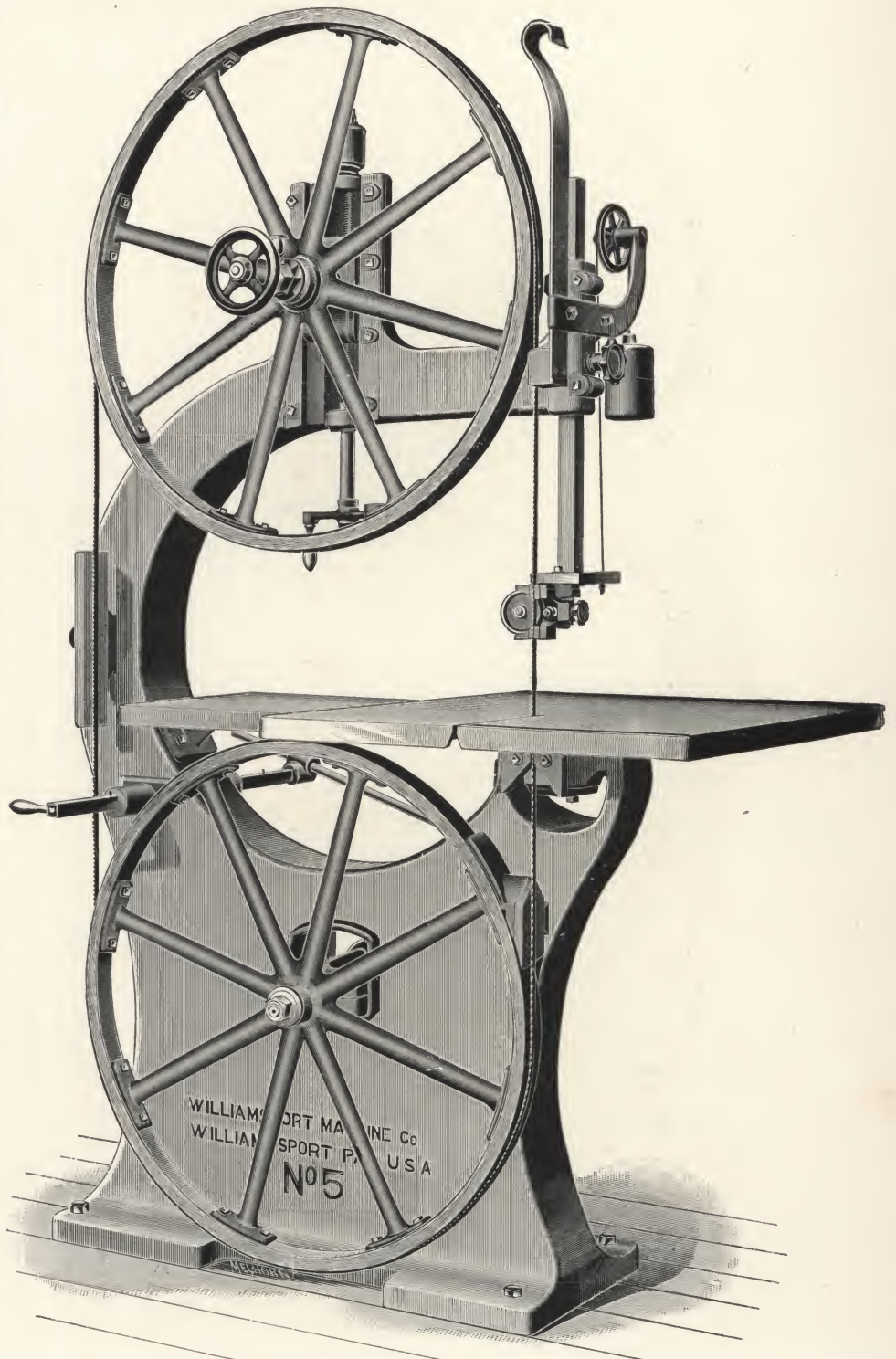


Fig. 7.—Complete, 37-inch Band Saw.

Weight.
1,200 lbs.

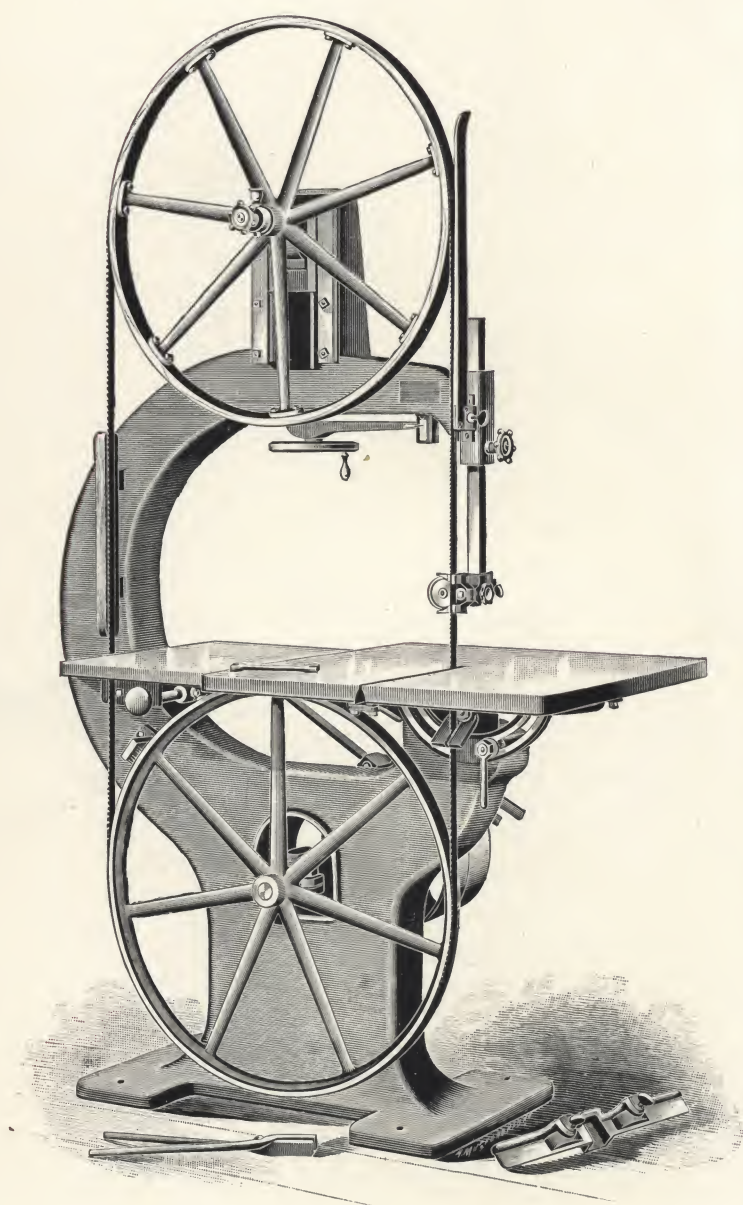
Code Word.
Faculty.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 8.

F. H. CLEMENT CO.'S

Patent Improved 36-Inch Band Saw Machine.



WE have used especial care in designing and building this machine, so as to furnish a first-class tool in all details at a comparatively low price; while at the same time the high standard of our workmanship is maintained, and in many particulars advanced.

The Frame is cast entire and is cored out in box form so as to possess the greatest possible stiffness in proportion to its weight.

The Shafts, tension screw and guide spindle are of steel, the latter being square in section, and suitably counter-balanced.

The Upper Wheel has hard wood rim, glued up from thin dry veneers, making a continuous rim, which is firmly secured to an iron center or "spider;" the hub is bushed with bronze which runs on a hard steel stud with self-oiling arrangements, and an adjusting screw and finger wheel controls the running of the blade.

The Lower Wheel is of iron, into which the steel shaft is pressed and the whole turned true; both are covered with pure gum bands ground true, and accurately balanced, and great pains are taken with all these processes so as to ensure perfect work.

The Table (either wood or iron), is bolted to a heavy segment bar extending entirely across it, planed true on its bearings and arranged to tilt to 45 degrees and clamp tightly without the use of a wrench.

The Patent Weighing Strain is always elastic, thus avoiding the trouble found with counter-weights, which are too rigid for light blades.

Mohawk Patent Guide, made by us, is furnished on every machine, and there are steady guides above the main guide and at the left of the machine, to prevent vibration of the blade.

The Lower Boxes are extra long, divided to take up wear and adjustable for alignment.

Every Machine is supplied with one blade made ready for use, scarfing frame, tongs and wrench, and is carefully crated and delivered on cars at the factory without extra charge. Blades can be used from $\frac{1}{8}$ to $1\frac{1}{2}$ inches wide. The sawing space is 36 inches by 14 inches deep.

Tight and Loose Pulleys are $14 \times 4\frac{1}{4}$ inches, and should run about 400. Two or three horse power will be required. Blades are 19 feet 3 inches long.

Fig. 8 —Complete, Wood Table and One Blade.....	Weight.	Code Word.
Fig. 8 A— " Iron " " " "	1,100 } lbs.	Faded.
	to	
	1,250 }	Fadeless.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 9.

C. B. ROGERS & CO.'S

No. 4, 36-Inch Band Saw.

THIS is a very heavy and substantial machine, designed for a high grade Band Saw for pattern shops or wherever a first-class tool is desired.

The Post or Frame is cast in one piece with box core, making it very stiff.

The Wheel Shafts run in yoked boxes, the upper one being pivoted, the adjustment to line the wheel being controlled by a hand wheel within easy reach from front of machine.

The Wheels are very light and strong, have cast-iron hub, wrought spokes and laminated wood rim with rubber tire, the iron work all being highly finished.

The Guide-bar is square and has a counter-balance; the Mohawk Guide is furnished when not otherwise specified.

The Table is iron, perfectly true and well finished, and is arranged to tilt for bevel work. There is a belt shifter attached to the post.

This Band Saw is furnished with one $\frac{1}{2}$ -inch blade, 20 feet long, one brazing vise and tongs. Saws up to $1\frac{1}{2}$ -inch may be used.

Tight and Loose Pulleys are $12 \times 4\frac{1}{2}$ -inch and should run 400 to 500 revolutions per minute.

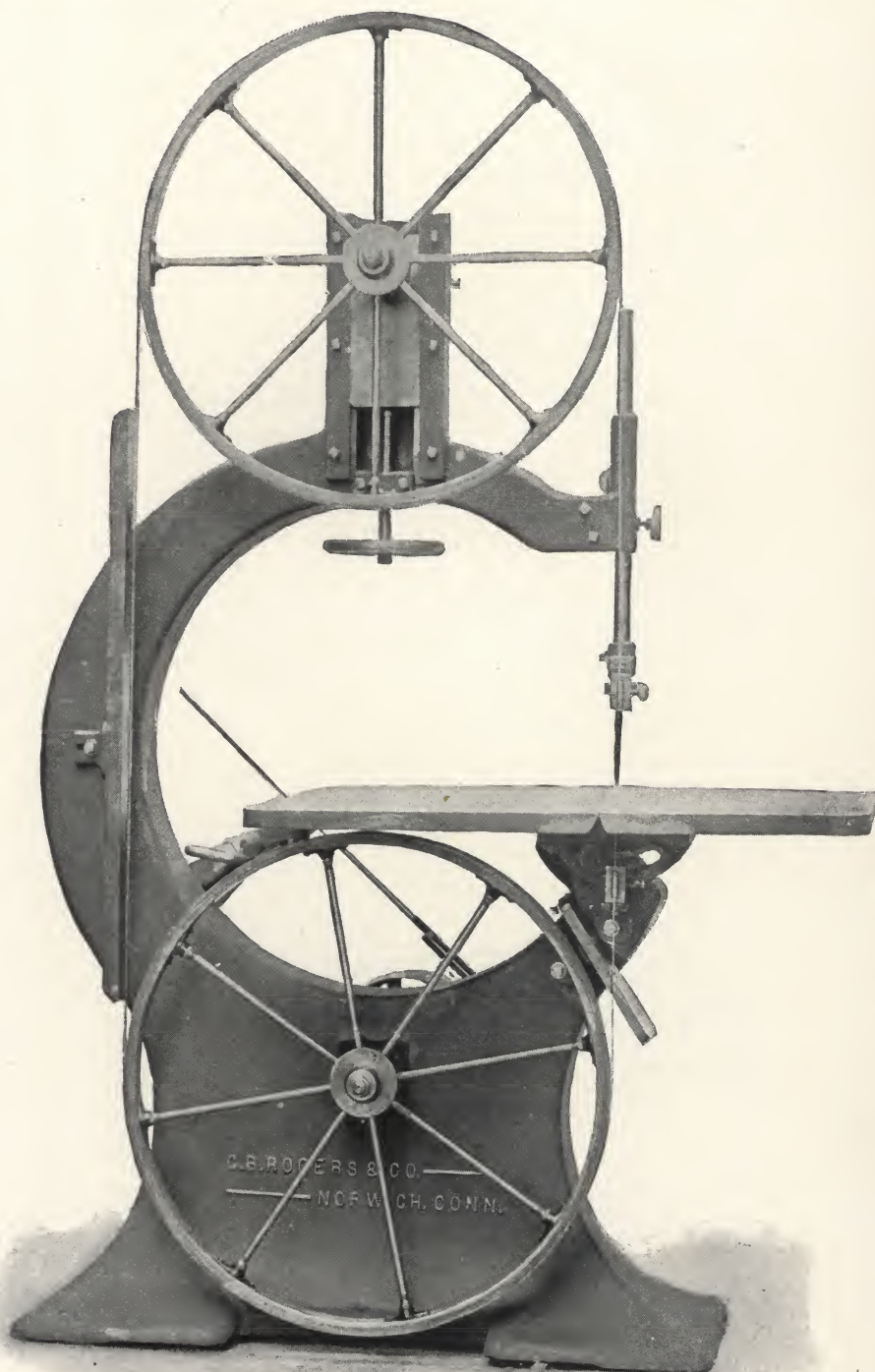


Fig. 9.—Complete, 36-Inch Band Saw.....

Weight.
1,800 lbs.

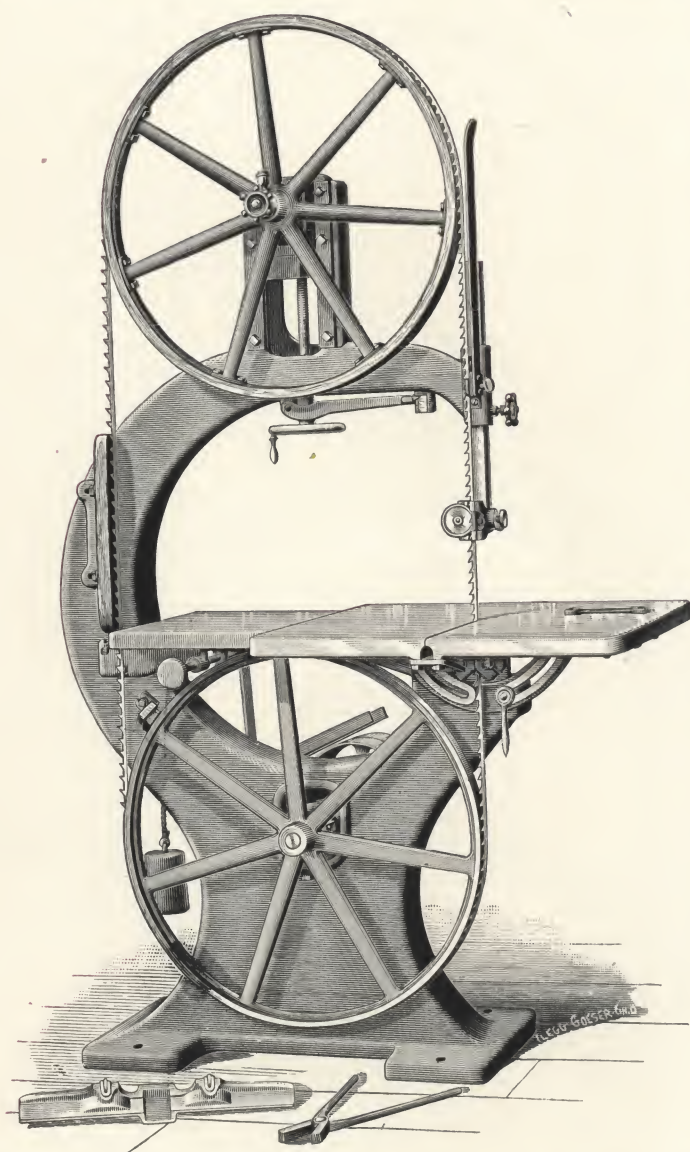
Code Word.
Fagot.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 10.

F. H. CLEMENT CO.'S

Patent Improved 34-Inch Band Saw Machine.



WE have used especial care in designing and building this machine, so as to furnish a first-class tool in all details at a comparatively low price; while at the same time the high standard of our workmanship is maintained, and in many particulars advanced.

The Frame is cast entire and is cored out in box form so as to possess the greatest possible stiffness in proportion to its weight.

The Shafts, tension screw and guide spindle are of steel, the latter being square in section.

The Upper Wheel has hard wood rim, glued up in thin dry veneers, making a continuous rim, which is firmly secured to an iron center or "spider;" the hub is bushed with bronze which runs on a hard steel stud with self-oiling arrangements, and an adjusting screw and finger wheel controls the running of the blade.

The Lower Wheel is of iron, into which the steel shaft is pressed and the whole turned true; both are covered with pure gum bands ground true, and accurately balanced, and great pains is taken with all these processes so as to ensure perfect work.

The Table (either wood or iron) is bolted to a heavy segment bar, extending entirely across it, planed true on its bearings and arranged to tilt to 45 degrees and clamp tightly without the use of a wrench.

The Patent Weighing Strain is always elastic, thus avoiding the trouble found with counterweights, which are too rigid for light blades.

Mohawk Patent Guide, made by us, is furnished on every machine, and there are steady guides above the main guide and at the left of the machine, to prevent vibration of the blade.

The Lower Boxes are extra long, divided to take up wear and adjustable for alignment.

Every Machine is supplied with one blade made ready for use, scarfing frame, tongs and wrench, and is carefully crated and delivered at freight house here without extra charge. Blades can be used from $\frac{1}{8}$ to 1 inch wide. The sawing space is $33\frac{1}{2} \times 14$ inches.

Tight and Loose Pulleys are $12 \times 3\frac{1}{4}$ inches, and they should run about 450. Two to three horse power will be required.

Fig. 10 —Complete, Wood Table and One Blade.....	Weight.	Code Word.
Fig. 10 A— " " " " " "	850 } lbs.	Fairy.
	975 }	Fallible.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 11.

ROWLEY & HERMAN CO.'S

New Pattern, No. 2, 32-Inch Band Saw.

WE recommend this machine for agricultural, bracket, cabinet, car, carpenter, carriage, chair, organ, piano, sash and door, wagon, pattern and job shops, planing mills, etc. It works equally well in hard or soft wood, and will carry blades up to $1\frac{1}{2}$ inches in width.

The Main Frame, is cored out and cast in one piece, well proportioned with a good solid base, and of great strength.

The Wheels are 32-inch diameter, with $1\frac{1}{2}$ inch face, light, strong and carefully balanced. They are covered with pure para rubber, securely cemented and ground perfectly true. They are provided with vertical, horizontal and angular adjustments, by which the saw can always be made to run accurately on any portion of their faces.

All the adjustable parts of the machine are carefully and accurately fitted. The raising screw has square thread, and is much less liable to bind and wear than the V thread used on other makes of similar machines. A steel compensating spring is provided to allow for the contraction and expansion of the saw, thus avoiding the breakage of saws.

The Table is made of iron or of wood, as ordered, and is adjustable to any angle not exceeding 45° . It is provided with an improved belt shifter, placed convenient to the operator.

The Driving Shaft and guide rod are of the best crucible steel.

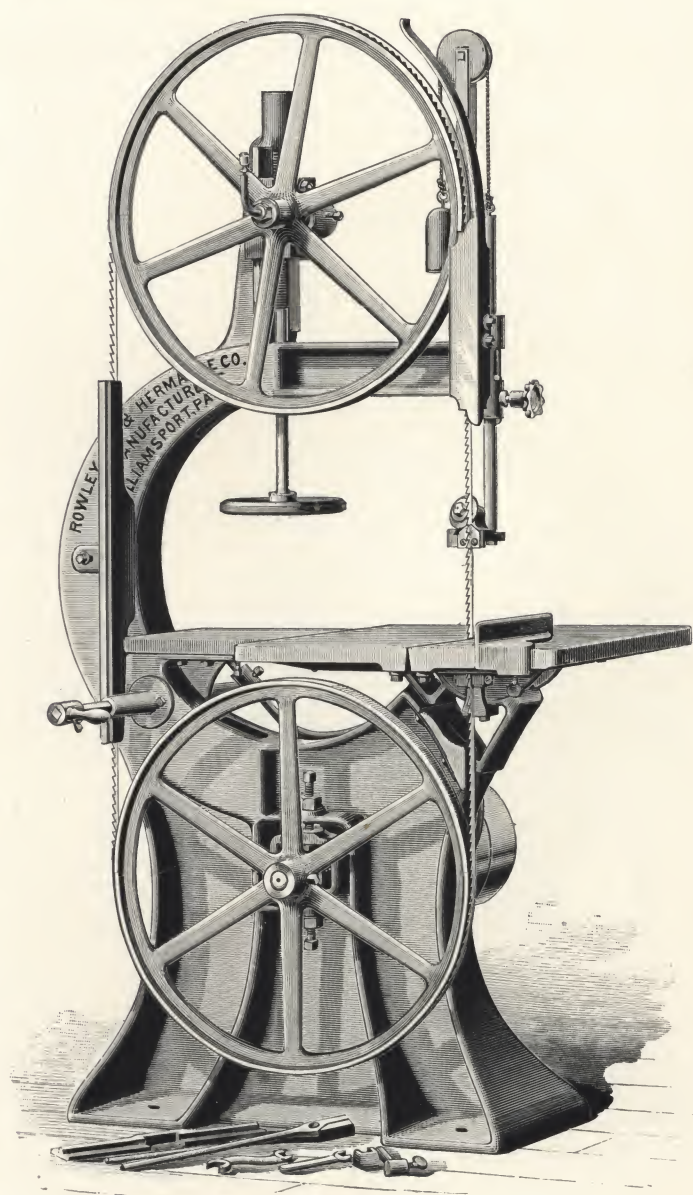
The Guide Rod being of steel, instead of iron used in other makes of Band Sawing Machines, is much stiffer and admits of the saw being held more rigid.

Saws from 16 feet to 17 feet 3 inches long can be operated. The machine will cut 15 inches thick, and being 31 inches from blade to frame, will swing a circle of 62 inches.

We furnish a parallel slitting gauge, scarfing frame, one pair soldering tongs, one $\frac{1}{2}$ -inch saw blade and the necessary wrenches with each machine.

Each machine is tested on actual work before it leaves our factory, and we warrant entire satisfaction on a trial of thirty days.

Tight and Loose Pulleys, 12 inches diameter by 4 inches face, and should run 400 revolutions per minute.



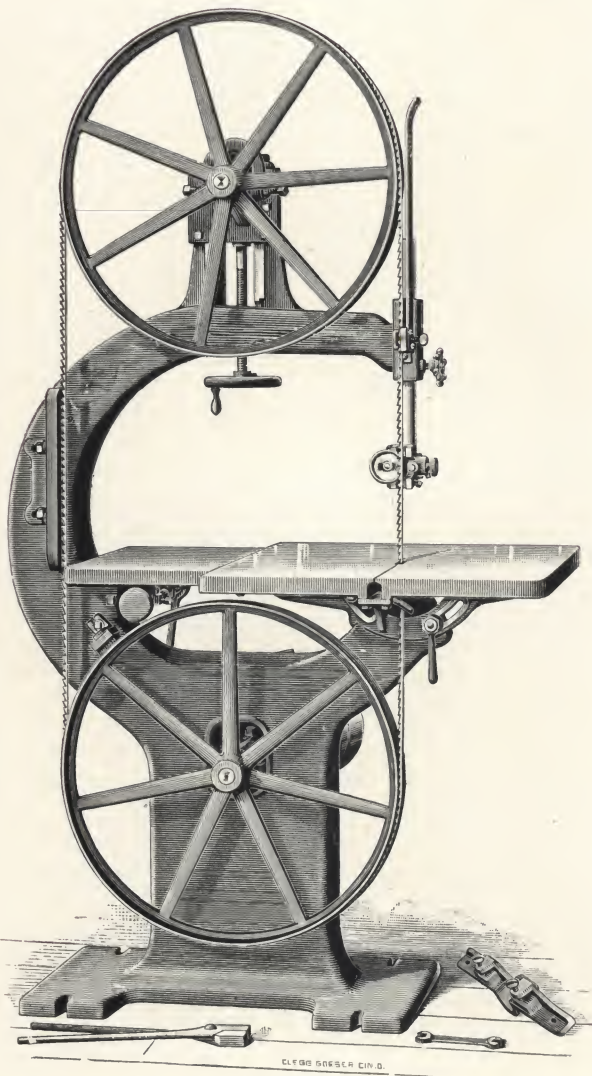
	Average H. P. Required.	Weight.	Code Word.
Fig. 11.—Complete, Iron Tilting Table	1 to 3	1,150 lbs.	Fallow.
Fig. 11 A, " Stationary Wood Table	1 to 3	1,000 "	Falsetto.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 12.

F. H. CLEMENT CO.'S

30-Inch Band Saw Machine.



THIS is the lightest Band Saw that we make, and the wheels are as small as we would advise for practical use.

The Frame is cast in one piece with hollow or "cored" section, and is much more rigid and heavy than is usual in this class of tools.

The Wheels are light and strong, having concaved arms and T rims.

The Shafts are of hammered steel turned and polished.

The Boxes are very long and adjustable for alignment and wear; loose pulley has self-oiling attachment.

Mohawk Patent Guide is furnished unless otherwise ordered.

The Table is of kiln-dried hard wood, (or iron if ordered,) and tilts to an angle; the belt shifter is adjustable for any usual direction of belt.

The Wheels are very carefully balanced and covered with endless gum bands ground true.

All Adjustments of wheels, guides and table are made without the use of wrenches.

The Tight and Loose Pulleys are 12 x 3½ ins. and should run about 500; we furnish one French blade,

joined, filed and set, scarfing frame and tongs, and crate the machine and deliver it on cars at the factory.

We have sold several hundred of these machines and we can recommend them for light work. Blades can be used up to ¾ inch wide. Iron Table extra.

	Weight.	Code Word.
Fig. 12.—Complete, Wood Table and One Blade.....	750 lbs.	Famish.
Fig. 12 A, " Iron " " " "	850 "	Famulate.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 13.

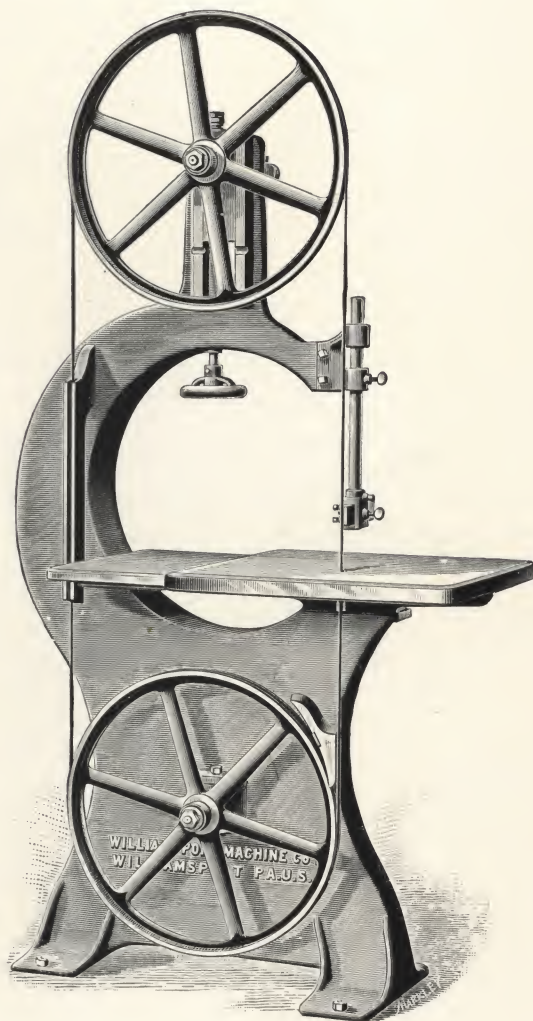
WILLIAMSPORT MACHINE CO.'S

No. 2, 26-Inch Improved Band Saw.

WITH IRON TILTING TABLE.

IN building this machine our aim has been to furnish a Band Saw with as few parts as possible, and still have a complete machine. We believe we have succeeded in producing one of the most simple and easiest operated Band Saws now in use, and one which we can sell much below any other on the market.

This Machine is built entirely of iron and steel, and arranged with iron tilting table. Our improved device for raising and lowering the upper wheel is unsurpassed for simplicity and ease of adjustment. There is a spring to compensate for the contraction and expansion of the saw. The upper wheel can be adjusted to make the saw run further forward or back on the wheel by a thumb screw, without tightening or loosening any screws or bolts. The lower wheel is also adjustable. The wheels are 26 inches in diameter, being turned perfectly true, and pure gum covering is placed around each wheel and ground true. The frame is cast in one piece. The spindle carrying upper wheel runs in long connected boxes. The guide raises and lowers with the guide bar, to adjust itself to thick and thin lumber, and has a capacity of 12 inches under the guide. We recommend this machine for bracket, piano and organ factories; also for pattern work, planing mills, etc. In fact, the machine is suitable for general wood-working of all kinds, in either hard or soft wood. With each machine we furnish one $\frac{1}{2}$ -inch saw blade, brazed, set and filed; also one pair of brazing tongs. We can fit any patent band saw guide to this machine at slight additional cost.



Floor space required, including the size of the table, 4 feet by 2 feet 4 inches. Saws up to 12 inches under guide. Distance between the saw and frame, 24 inches.

Tight and Loose Pulley, 12 inches diameter by $3\frac{1}{2}$ inch face. Should run 375 revolutions.

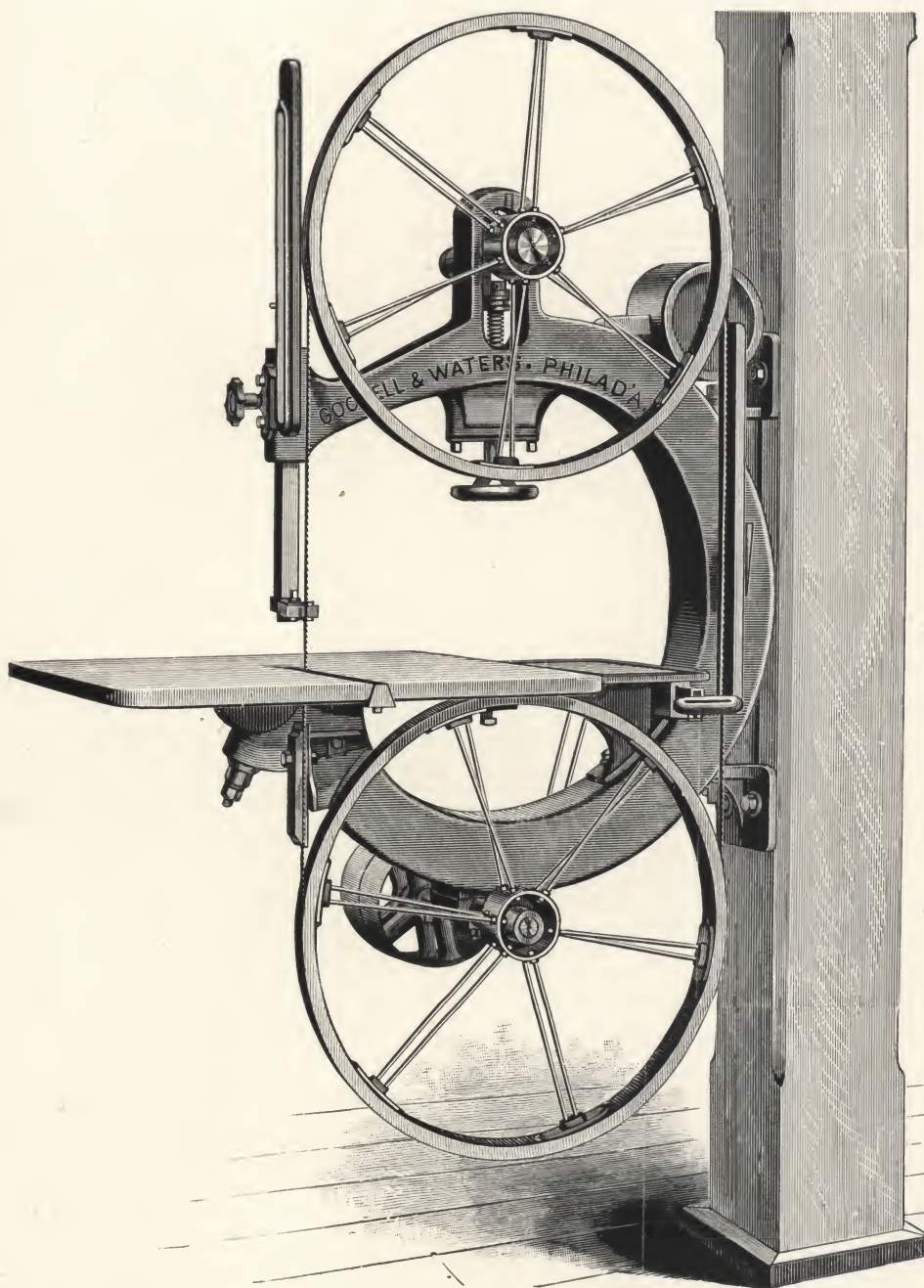
Fig. 13—Complete, with Iron Tilting Table.....	Weight, 950 lbs.	Code Word, Fanatic.
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AMERICAN WOOD-WORKING MACHINE CO.

Fig. 14.

GOODELL & WATERS'

No. 4 Post Band Saw.



THE Post Band Saw is intended to go into rooms where it would be difficult to put a saw with the ordinary large frame, and for a class of work where a large saw is not needed, such as ordinary pattern work and light furniture. In designing it we have dispensed with the large base only, all the working parts being the same as in our large saws. It can be attached to any ordinary post or wall plate. It has our patent combined weight and spring for maintaining a uniform tension on the saw and providing for any sudden and unusual strain. To provide against any sudden strain in starting, we put on our patent shipper which moves the belt on to the tight pulley gradually, but moves it off instantly. It has our patent wheels 30 inches in diameter. The wood rims have no joints across the periphery. The tables, of either wood or iron, as may be desired, are 31 inches square and can be set at an angle. The guide can be raised 12 inches. It will carry any saw up to 1 inch, 15 feet 3 inches long. One saw, brazing clamp and tongs furnished with each machine.

	Weight.	Code Word.
Fig. 14—Complete, with Wood Table	600 lbs.	Fandango.
Fig. 14 A, " " Iron "	600 "	Fanfaron.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 15.

WILLIAMSPORT MACHINE CO.'S

Improved Scroll Saw.

THIS cut represents our Improved Scroll Saw, which we manufacture with either stationary or tilting table, and is intended for furniture, sash, door and blind factories, carriage and pattern shops, etc.

The Frame is cast in one piece, making a very solid base, which allows of a high rate of speed without jar or trembling.

The Table is made of alternate strips of hard wood glued together and firmly fastened to heavy cast-iron plates which prevent warping.

The Strain is the best on the market, arranged to produce an unusually even tension; admitting of high speed, and can be raised or lowered for any thickness up to 12 inches.

The Under Guide-ways are so constructed that their expansion by tightening does not tighten the cross-head, which is an important feature.

Instead of an ordinary tight and loose pulley the **crank-shaft** carries a friction pulley and combination brake by which the saw is stopped and started instantly by a single motion of the foot. An 8-inch diameter cast-iron plate is set in the table around the saw to prevent wearing of the table.

Changing from inside to outside work is instantaneous. The saw is passed through the table and slides into the cross-head, which it cannot miss catching. It is firmly held by a steel clamp and if the saw should break it can be used again by simply filing a small notch in it, when it is ready for use.

Both upper and lower parts are arranged to take up lost motion and wear.

Driving Pulley $8\frac{3}{4} \times 3$ inches and should run 800 revolutions per minute.



Fig. 15 —Tilting Table.....

Fig. 15 A—Stationary Table

Weight.
600 lbs.
600 "

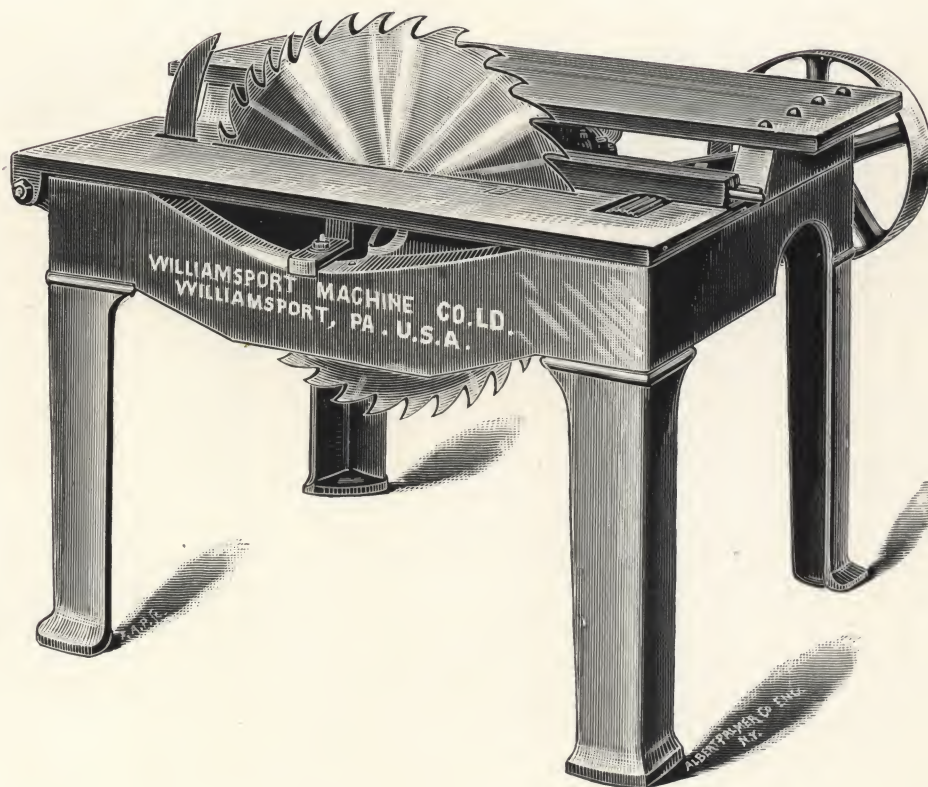
Code Word.
Fangled.
Fantasy.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 16.

WILLIAMSPORT MACHINE CO.'S

Improved Bolter.



THE above cut represents our New and Improved Lath Bolter, a labor-saving machine designed for use in the manufacture of Lath and Pickets. This machine is provided with feed roll in front of saw, which is driven from the right hand side of the machine. Also provided with a gauge by which Lath, Bolts, Pickets, etc., can be made without stopping the machine. Gauges are made to saw 1, 1½ or 2 inches wide without moving the main gauge, by simply swinging sectional pieces which are attached to the main gauge. This point is found very useful, as no time is lost in changing from lath to pickets. The saw on the machine is 24 inches in diameter. Arbor made of steel, large in diameter, and provided with end box to take up lost motion; also to steady mandrel at the end where the saw goes on. There is a steel spreader back of saw. The table bed is made of iron, planed true and hinged at rear of machine, so it can be raised to take off the saw. There are steady-pins made adjustable to make the saw run true. This machine is capable of bolting to the full capacity of the Lath Mill. Machine guaranteed to give satisfaction. Driving pulley, 8 inches diameter, 8 inches face; should run 1,600 revolutions per minute.

Code Word.

Fig. 16—Complete, Improved Bolter..... **Farce.**

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 17.

C. B. ROGERS & CO.'S

Vertical Car Boring Machine.

WITH THREE SPINDLES.

THE machine represented by the accompanying cut, recently constructed from new patterns, is designed for boring heavy timbers with different sizes of holes, without the delay and trouble of adjusting the spindle or changing the bits, necessary in single-spindle machines.

This machine has three spindles, operated by the handles connected with the weighted levers at the top, and driven by one belt from a countershaft at the back of the machine. By a heavy weight, in connection with adjusting friction pulleys, the belt remains at the same tension whatever the position of the bits.

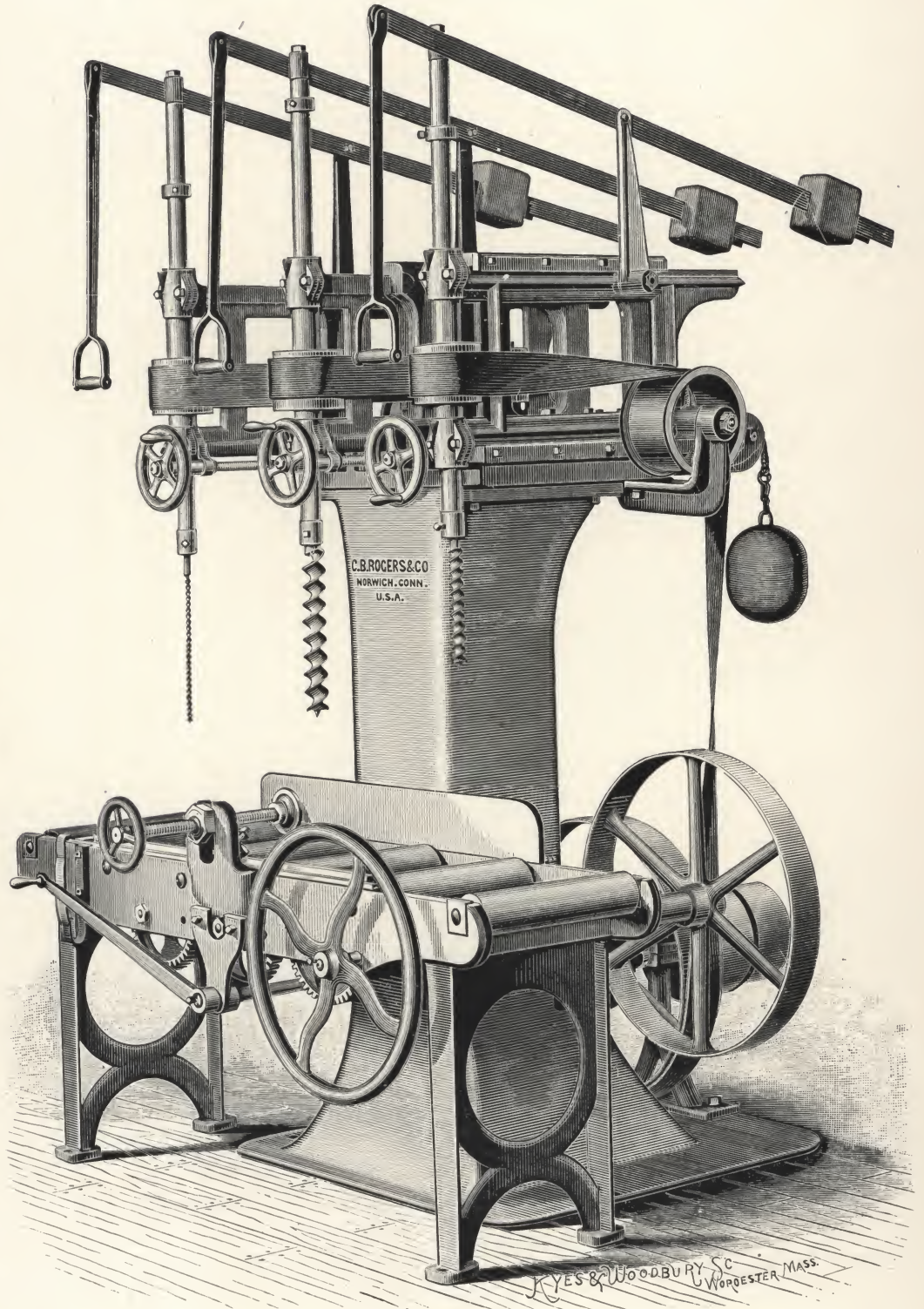
The Middle Spindle has a larger pulley than the other two, for slower speed to work the larger bits.

Seventeen Bits are furnished, varying from $\frac{3}{8}$ to 2 inches, all above $1\frac{3}{8}$ inch to work in the middle spindle.

The Bits have a horizontal adjustment of 15 inches, and vertical throw of 16 inches.

The Bed upon which the timber rests is furnished with four rollers, which can be operated by the hand wheel or by the lever which operates the friction power-feed attachment from the countershaft. The machine is built wholly of first-quality iron and steel, and in the most substantial manner, thus making a useful and durable tool for all kinds of timber boring.

The Counter is attached to the base of the column, and is furnished with **tight and loose pulleys**, 10-inch diameter and 5-inch face, which should be speeded to 275 revolutions per minute.



Code Word.
Fardel.

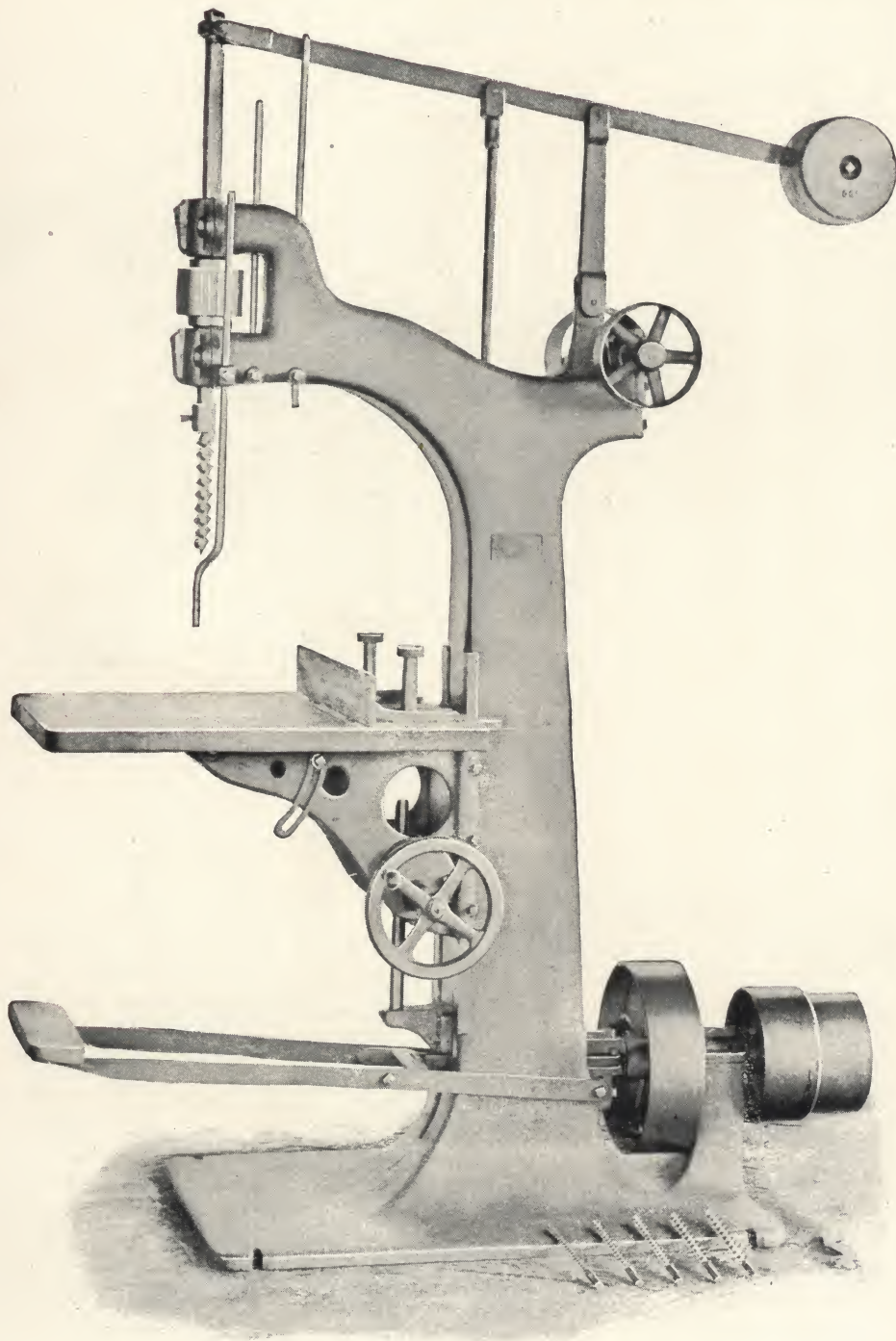
Fig. 17—Complete, Vertical Car Boring Machine.....

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 18.

C. B. ROGERS & CO.'S

No. 2 Vertical Borer.



LARGE sized machine with bit standing 18 inches from the post, has throw of 12 inches and provided with stops to regulate depth of hole and length of throw and has large table adjustable by hand wheel tilting forward for bevel work. Guide can be adjusted to either side of the table, bit driven by belt direct from countershaft. Bits equal to sixteen quarters are furnished with the machine.

Fig. 19.

C. B. ROGERS & CO.'S

No. 1

Vertical Spindle Borer.

MEDIUM sized machine, same design as above, with bit 10 inches from the post, has throw of 12 inches and provided with stops to regulate depth of hole and length of throw, bit shaft driven direct by belt. Is supplied with what is termed a universal table tilting forward and to either side. Bits equivalent to sixteen quarters furnished with the machine.

	T. & L. Pulleys.	Revolutions.	Weight.	Code Word.
Fig. 18.....	10 x 4	500	1,250 lbs.	Fashion.
Fig. 19.....	8½ x 3½	500	800 "	Fasting.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 20.

F. H. CLEMENT CO.'S

New No. 3 Vertical Boring Machine.

THE large sale of our No. 2 Post Boring Machine for furniture, chair and other shops, and the constant call for improved all iron machines, has induced us to offer an entirely new design, having the same advantages as the older machines and a number of valuable improvements additional.

The Frame is cast hollow in one piece with a broad and heavy base, which needs no top bracing.

The Spindle is of steel and has a self-oiling babbitted box with bronze end step for the lever connection; it hangs 12 inches from the post and moves 5 inches vertically in boxes that are longer than the movement, whereby the wear is greatly reduced.

The Table Bracket has a screw adjustment of 12 inches vertically with an adjustable gib on the slide; the table is usually of hard wood glued up, but may be of iron at a slight extra charge.

The Depth Gauge is threaded for adjustment and made fast with a thumb screw.

The Method of Balancing the spindle and pulley by means of the connecting bar which passes through the frame to the foot lever, has proved a great success; the retracting spring has only to overcome the friction of the parts, and as a consequence the labor on the operator's foot is very light, thereby largely increasing the capacity of the machine. For quick and accurate work, and for excellent fitting of parts, we claim this machine has no equal.

The Counter Shaft has three bearings, the lower one A, being adjustable vertically three feet, so that the ceiling hanger can be set for any ordinary height of ceiling. The T and L pulleys are 8 x 3½ inches and should run 1,000 to 1,200 per minute. Shipping weight 800 lbs.

Self Centering Chucks can be attached without fitting, and will be furnished at the cost of the chuck extra.

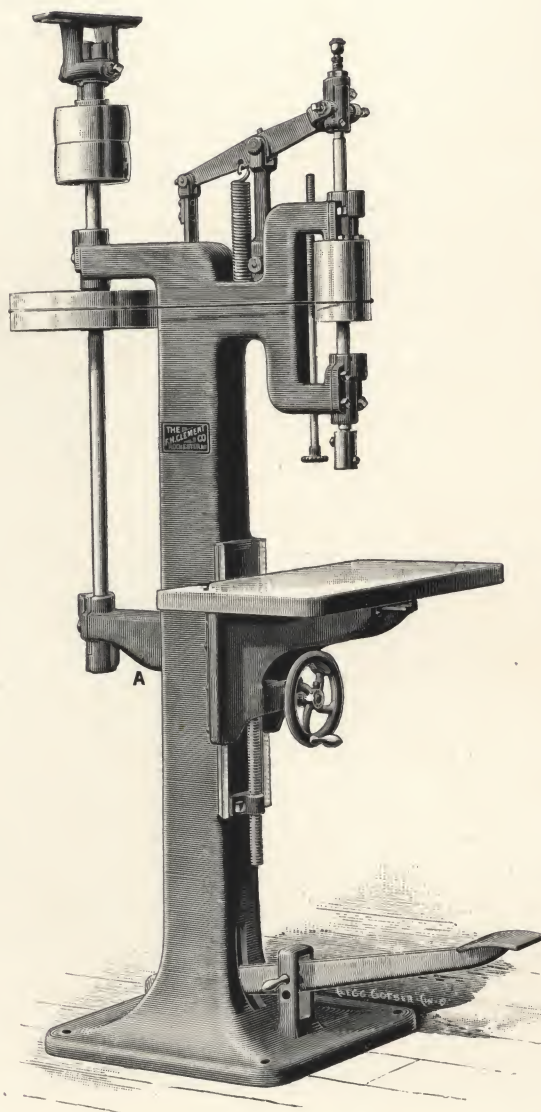
Fig. 20 —Complete, with plain Bit Socket.....

Fig. 20 A—Extra, for Self Centering Chuck.....

Code Word.

Fatigue.

Fatling.

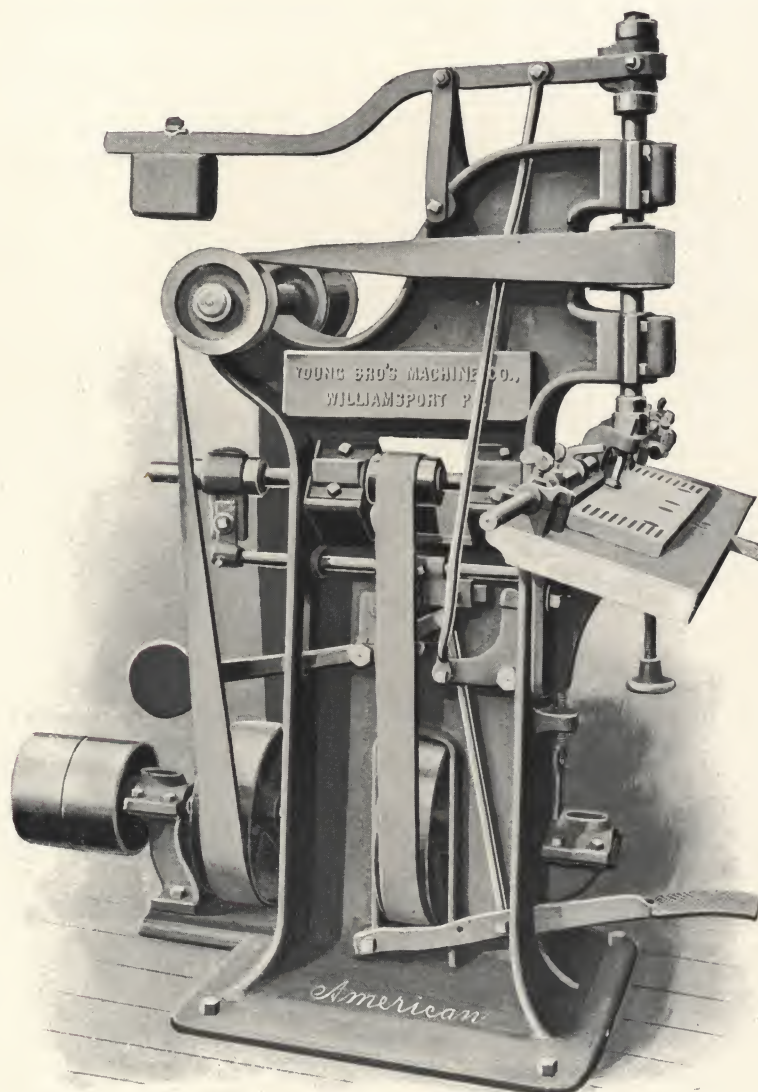


AMERICAN WOOD-WORKING MACHINE CO.

Fig. 21.

YOUNG BROS.'

New Vertical and Horizontal Boring Machine.



THE accompanying cut represents a new machine for boring two holes simultaneously in table, desk or other frames, to receive wood screws for fastening the tops to the frames, and for many other places where screws are inserted in a similar manner.

The machine is so arranged that by pressing down the foot treadle the large and small holes are quickly bored, finishing the work at one operation. It is thoroughly well built. Every shaft and the main bolts being made of steel. It is rigid and heavy, weighing one thousand pounds, and all parts are adjustable to compensate for wear. The advantages of this machine are obvious to every furniture manufacturer. It saves the inevitable "setting up," which is the time killer in all factories, and if at any time a few pieces are to be bored, the machine is always ready.

Fig. 21—Complete, Vertical and Horizontal Borer.....

Code Word,
Fawn.

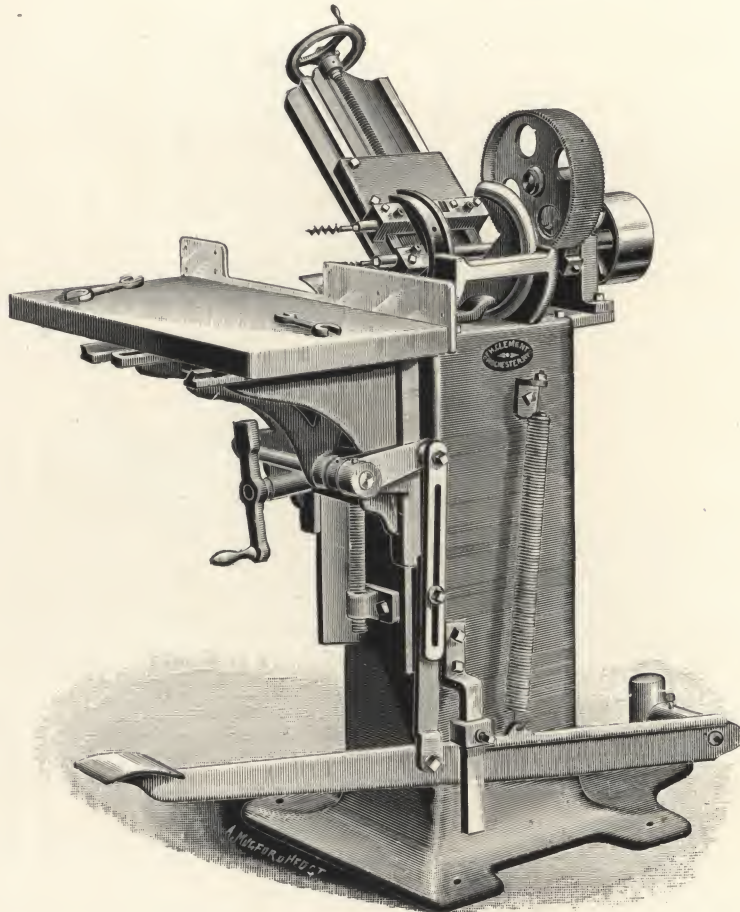
AMERICAN WOOD-WORKING MACHINE CO.

Fig. 22.

F. H. CLEMENT CO.'S

Double Horizontal Boring Machine.

WITH ANGULAR ADJUSTMENT.



THIS is a finely designed and carefully made machine in every respect. It is designed for that class of work in which two holes are to be bored at the same time, as in doweling, chair, cabinet, carriage, car and other similar work.

The Frame is cast in one piece, and is strong and well proportioned.

The Two Spindles are mounted in an adjustable head which swivels around one of them, so that they may be set at an angle from the horizontal line of the table, as shown in the cut. The range of adjustment is from a horizontal to a perpendicular line and beyond. The distance between the centers can be from 1 to 10 inches, and this adjustment is made with a screw on a gibbed slide independently of the angular adjustment in any position.

The Table has a vertical movement on gibbed ways of 10 inches, and a forward and back movement also on gibbed ways of 6 inches. When so ordered, it may also have a longitudinal movement for mortising, as in some kinds of chair work.

The Intermediate Gear is mounted on a radius arm, so that it always retains an even mesh with the central spindle. By slacking a nut the gear may be thrown out of mesh with both spindles, so that a single spindle may be used at any time without running the gearing. Both gear and pinions are very carefully cut and matched together, are very wide on the face, ensuring durability, and they run without back-lash or rattle.

The Spindles are of steel, and the bearings are carefully scraped and fitted, so that the machine will start off cool from the first. The proportion of length of bearing to diameter is $4\frac{1}{2}$ to 1.

The Adjustment Screw for the table is worked by a crank under the table, making it very convenient, and a foot lever attachment is applied to the table slide so that the operator has the use of both hands for the work.

The Counter-shaft is located over head, directly above the machine, so as to equalize the wear on the boxes.

The Tight and Loose Pulleys are $8 \times 8\frac{3}{4}$ inches, and they should run about 600 per minute.

One pair of bits furnished with the machine, and extras to order. Power required, about 1 horse.

	H. P. Required.	Size.	Spread of Bits.	Shipping Weight.	Code Word.
Fig. 22	1	No. 1	1 in. to 10 in.	750	Feast.
Fig. 22 A	1	No. 2	1 in. to 16 in.	800	Feaze.

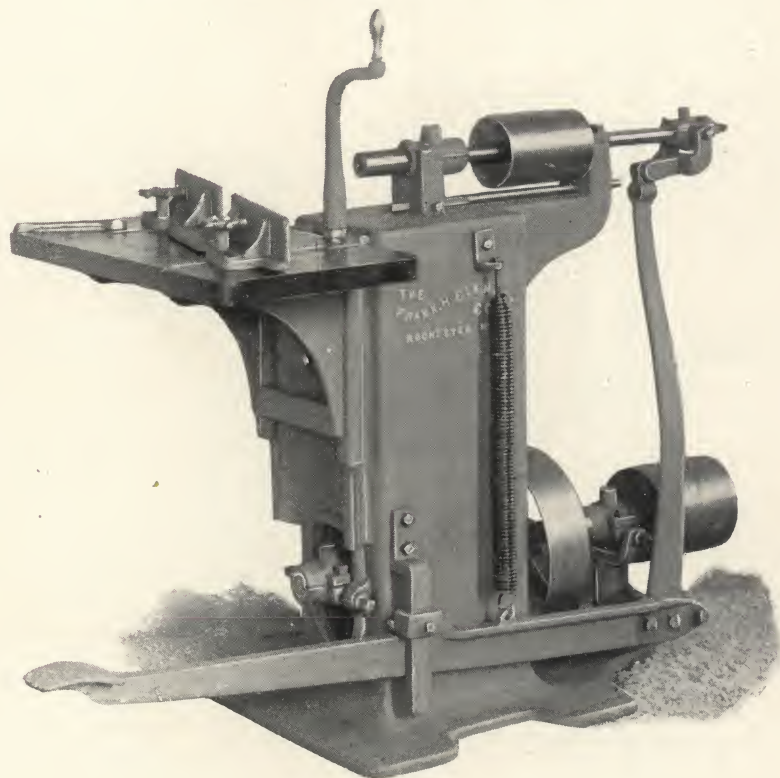
AMERICAN WOOD-WORKING MACHINE CO.

Fig. 23.

F. H. CLEMENT CO.'S

No. 1 Horizontal Boring Machine.

WITH IRON TABLE BAR AND STOP.



THIS is the neatest and most practical design for light work in the market. The frame is cored out hollow and is cast in one piece.

The Spindle is of steel, and has a long faced pulley driven from the counter-shaft, by means of which holes may be bored $4\frac{1}{2}$ inches deep or less.

The Table is of hard wood glued up, 14 x 28 inches, and has an iron stop-bar which is adjustable to any angle, and held by suitable clamp-wheels. The vertical adjustment is by a screw and hand-crank, with a range of 10 inches. The hand-crank is removable when desired.

The Rear Spindle-Bearing is turned down and has bronze end bearing, and all bearings are well proportioned and lined with a fine quality of habbitt metal. The foot-lever and returning springs are designed for quick and easy operation; and there is no downward pull on the rear end of the spindle, as in many so-called "first-class" machines. A stop for regulating the depth of the hole is provided on the frame under spindle pulley (not shown in the cut). All the parts are nicely fitted. This is specially a furniture and chair machine, and we sell frequently from 3 to 9 to one factory.

The Counter-Shaft has tight and loose pulleys, 7 inches in diameter and $3\frac{1}{4}$ face, and should run about 1,200 per minute. The loose pulley is self-oiling with improved separable bush.

About $\frac{3}{4}$ of one horse-power is required. Self-centering bit-chucks extra.

Fig. 23 A.

F. H. CLEMENT CO.'S

No. 0 Horizontal Boring Machine.

We also make on the same frame a "push" table borer with stationary spindle and without foot lever attachment. The table has the same vertical adjustment as the No. 1, and also slides to and from the bit 5 inches. Table and stop are of hard wood and counter-shaft is furnished, same as in No. 1 machine.

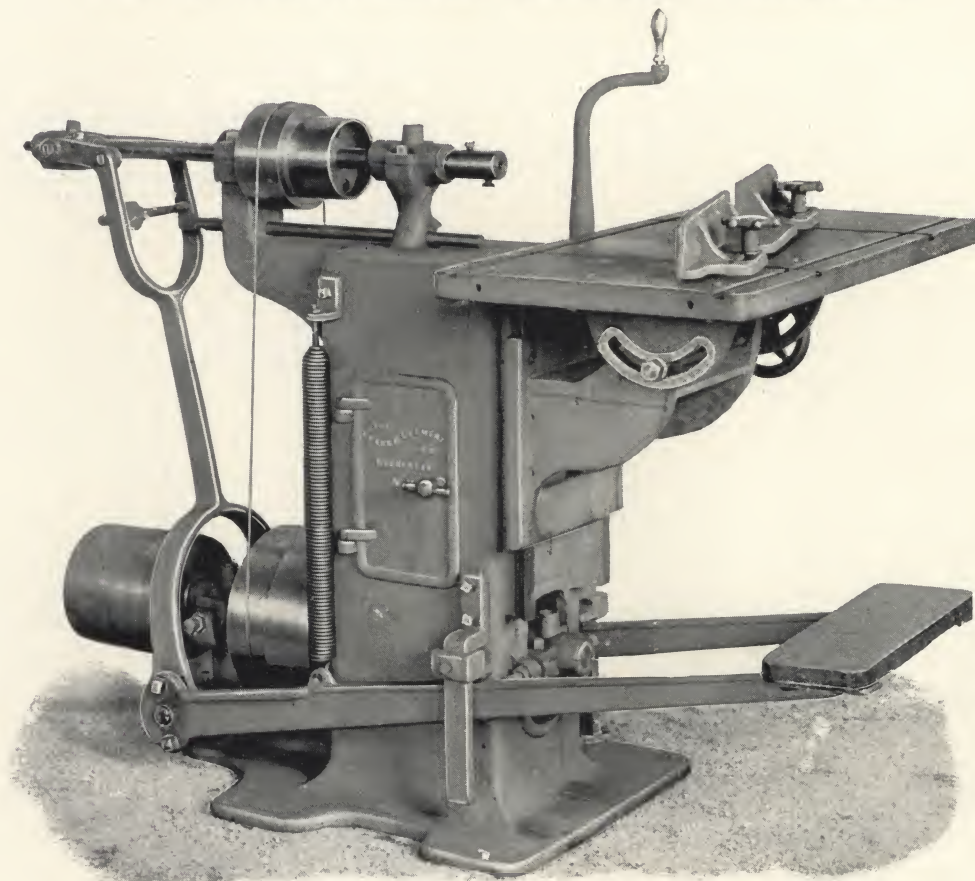
	Number.	Shipping Weight.	T. and L. Pulleys.	Speed.	Code Word.
Fig. 23	1	600	7 x $3\frac{1}{4}$	1,200	Feeble.
Fig. 23 A	0	550	7 x $3\frac{1}{4}$	1,200	Feeding.
Fig. 23 B, Self-Centering Chucks, extra.....					Feetless.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 24.

F. H. CLEMENT CO.'S

No. 2 Horizontal Boring Machine.



THIS machine has many advantages not found in other makes. It is all iron and steel (except the treadle bar); the frame is cast in one piece and is very strong and rigid, and carefully designed with reference to proportion and convenience.

The Boring Arbor is of steel, $1\frac{1}{4}$ inches in diameter, and is splined in a steel sleeve which runs in a very long bearing of fine babbitt metal, thus all the journals on the boring arbor are of steel. The stroke or depth to which the arbor bores is 9 inches.

A Steady Bearing is placed next the bit socket so that the wear can be readily taken up and the bit prevented from dodging as it enters the work; this is a great improvement on the usual method of sliding the spindle through a quill or sleeve, the wear in which cannot be compensated.

The Vertical Lever pulls directly on the center line of the spindle and not with a downward thrust as in most so-called "first-class" machines. This improvement speaks for itself.

The Table, when of iron, is made 18 x 32 inches surface, and has slots for the fence at right angles so that long work can be bored endwise as well as across, at any required angle. The table tilts to 45 degrees both ways, and the fence is adjustable in all directions to the same angle or less. Numerous holes are provided in the table and fence for the attachment of jigs or stops.

The Stop Gauge is easily reached by the operator at his post, and can be adjusted without stopping the machine.

The Foot Lever is arranged to give a good leverage on the boring arbor, and there is a returning spring on each side of the frame to equalize the action. This arrangement gives a quicker and easier movement than a counter-weight and the springs being very long in proportion to the required expansion, are practically indestructible. The tension may be adjusted when necessary.

The Table Bracket has a vertical adjustment of 10 inches, and is carefully fitted to the ways with an adjustable gib; the screw-crank is removable.

The Counter-Shaft has tight and self-oiling loose pulleys, $8 \times 3\frac{3}{4}$ inches, and should run 1,000 to 1,100 per minute.

About one-horse power is required. Shipping weight, 750 lbs. Self-centering chucks of various sizes, extra.

When wanted, a wood table similar to that on No. 1 Borer, will be furnished at a corresponding reduction.

Fig. 24 —Borer Complete, with Iron Table and Plain Bit Socket

Fig. 24 A—Little Giant Chucks, extra

Code Word.

Feline.

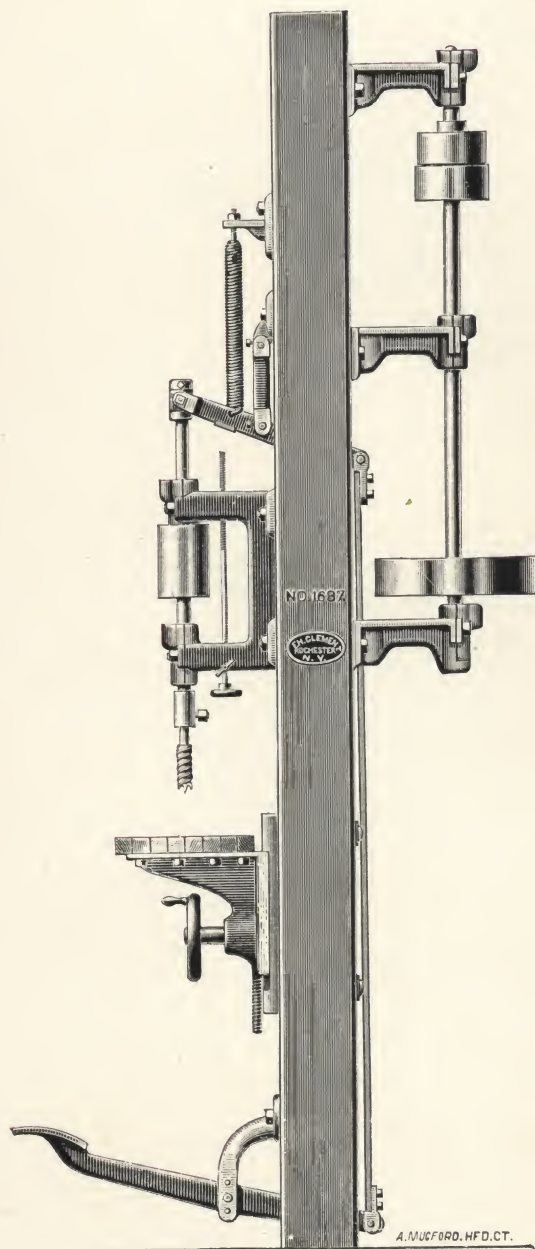
Fellow.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 25.

F. H. CLEMENT CO.'S

No. 2 Post Boring Machine.



THE large sale of this machine in the past few years, and the general satisfaction it has given, have induced us to remodel the patterns and add several improvements.

The **Spindle** is of steel, and has hard bronze friction collars for the lever sleeve. It hangs 9 inches from the post, and will bore 5 inches deep or less. The boxes in which it moves are longer than the entire vertical movement, so that the wear is very even and is reduced to the lowest possible point. These boxes are cast together in a hollow or cored yoke which is thus strong and rigid.

The **Table Bracket** has a screw adjustment of 12 inches on the slide, and there is ample provision for taking up the wear. The table is usually of hard wood, glued up, 14 x 28 inches, but will be made of iron when wanted, at a slight extra charge.

The **Depth Gauge or Stop** is threaded for adjustment, and is made fast with a set screw, and between the gauge and the work there is only one joint, so there is little, if any lost motion on the bit.

Notice the **Advantages** of the method of balancing the spindle and pulley, by means of the heavy bar connecting the foot lever with the balance lever; the retracting spring has only to overcome the friction of the parts, and as a consequence the labor on the operator's foot is very light, and the motion can be very quick, thereby increasing the capacity of the machine considerably. For these reasons and the care used in fitting the parts, as well as the general convenience of the adjustments, we claim that this machine has no equal of its kind in the market.

The **Counter-Shaft** has three bearings and is usually six feet long. The tight and loose pulleys are 8 x 3½ inches., and should run about 1,200 per minute. The post is usually 8 x 8 inches and 12 feet long. The loose pulley is self-oiling.

Little Giant Chucks can be attached to the spindle without fitting, and will be furnished when wanted at the cost of the chuck extra.

Shipping Weight, about 500 lbs.

Fig. 25 —Post Borer, complete, with Plain Bit Socket.....

Fig. 25 A—Self-Centering Chucks, extra

Code Word.

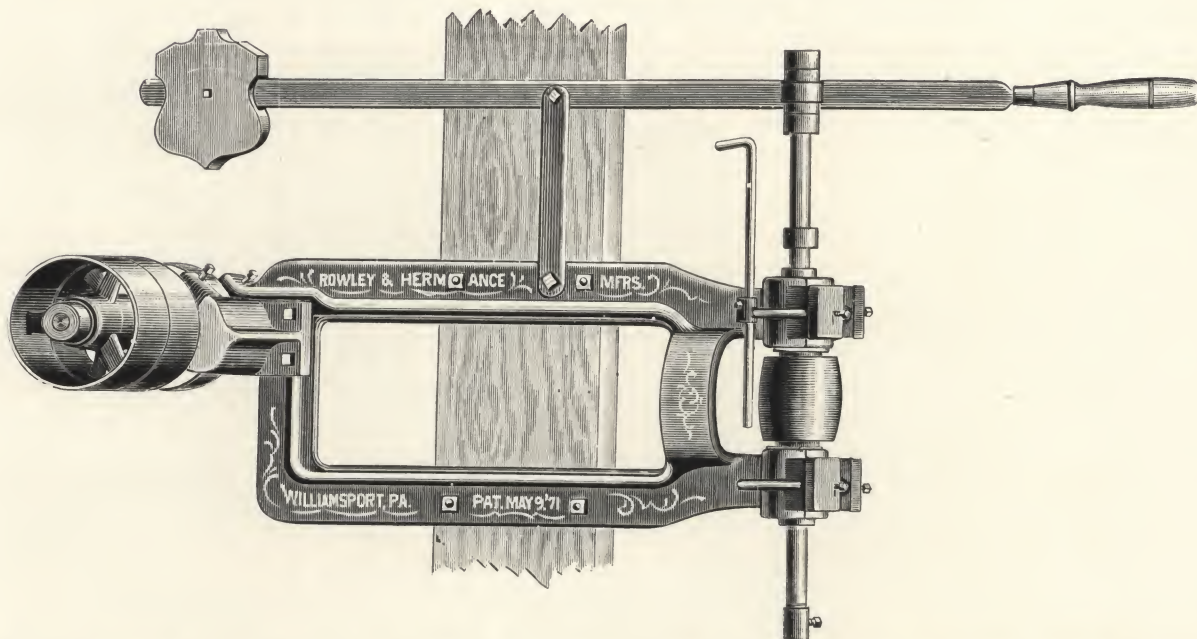
Fenced.

Fenceless.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 26.

ROWLEY & HERMANCE CO.'S New Pattern Post Boring Machine. WITH COUNTER-SHAFT.

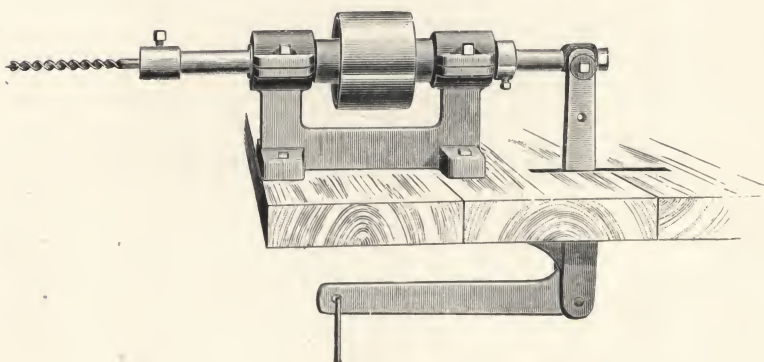


FOR bracket and job work. A very convenient Boring Machine for any purpose ; almost indispensable in any mill.
Tight and Loose Pulleys 6 x 3, and should run 800 revolutions per minute. Weight, 300 pounds.

Fig. 27.

C. B. ROGERS & CO.'S Bench Borer.

WITH LEVER AND TREADLE ATTACHMENT.

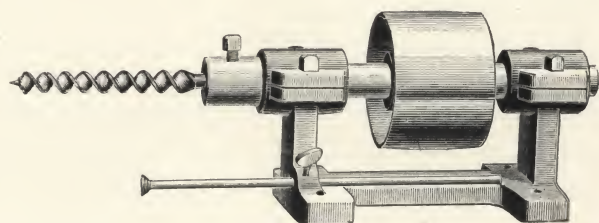


THIS will be found a very handy tool. The spindle has a throw of 8 inches, and is provided with stop collar to regulate depth of hole. We furnish with each machine a lever, connecting rod, and iron brackets, so that the spindle may be operated by means of a foot treadle.

The Pulley is 5-inch diameter, 3½-inch face, and should make 1,200 to 1,500 revolutions per minute.

Fig. 28.

C. B. ROGERS & CO.'S Medium Bench Borer.



A CONVENIENT tool for any kind of light work, as it can be set on a bench or in any convenient place, and takes up but very little room. It takes bits with shank 2½ x ½, and is suited for boring holes up to 1½ inch.

Pulley is 5-inch diameter, 3½ inch face, and should make 1,200 revolutions per minute.

Fig. 26—Rowley & Hermance's Post Boring Machine.....

Fig. 27—Rogers' Bench Borer

Fig. 28—Rogers' Medium Bench Borer

Code Word.

Fennel.

Fermage.

Ferment.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 29.

THE LEVI HOUSTON CO.'S Iron Frame Multiple Boring Machine.

THE cut represents our New Multiple Spindle Boring Machine, designed for rapid and accurate work. It is specially suited for boring table leaf work, furniture work and agricultural work.

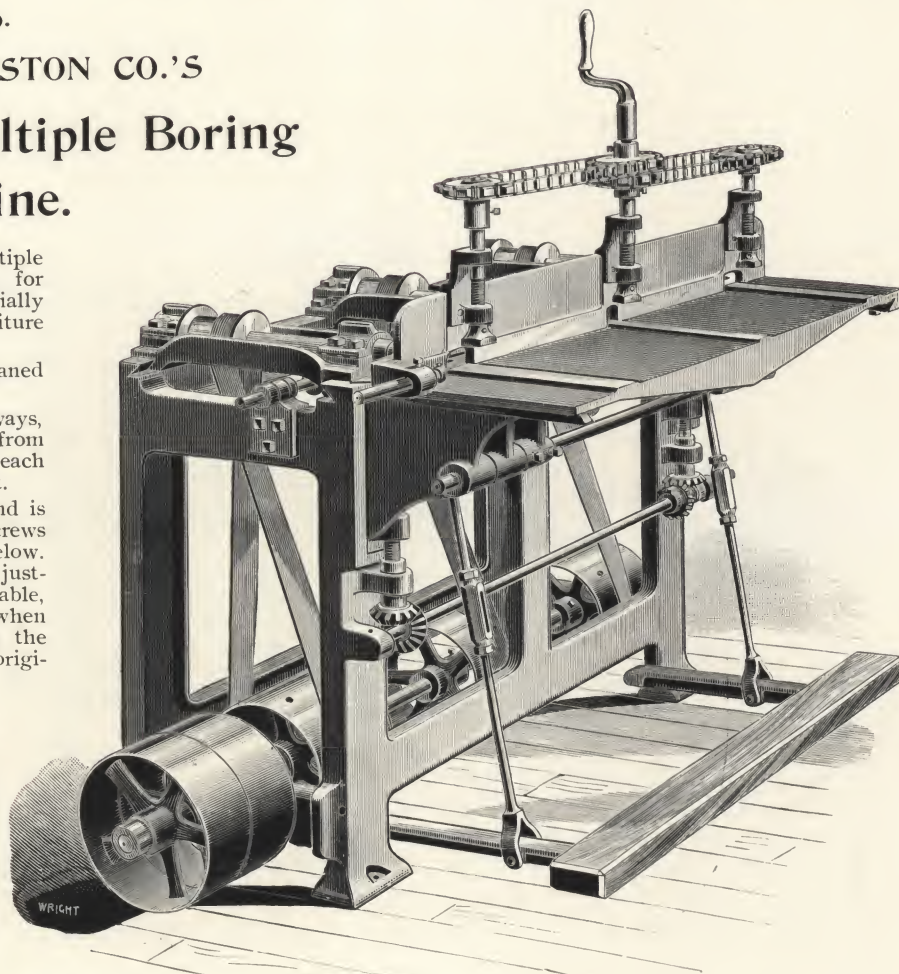
The Frame is iron, well braced, and planed perfectly true.

The Mandrel Frames slide on planed ways, and each mandrel is adjustable to and from the center mandrel by a hand wheel, and each mandrel is driven by an independent belt.

The Table works on planed ways, and is raised and lowered by bevel gears and screws operated by a crank and parallel shaft below. The treadle is connected to the table by adjustable rods to regulate the throw of the table, which is brought up to the boring bits when the treadle is brought down, and when the treadle is released the table returns to its original position.

The Clamping Device is entirely new, all the screws being operated by one crank handle in the center. One-quarter of a turn on this handle gives one-fourth inch movement to the screws, clamping the stock down to the planed surface of the table, and in connection with the end stop it is impossible to bore the holes out of line. For extension table work it surpasses anything on the market.

The machine can be made with three or more spindles; as a multiple borer it will bore from 4 inches to any required distance.

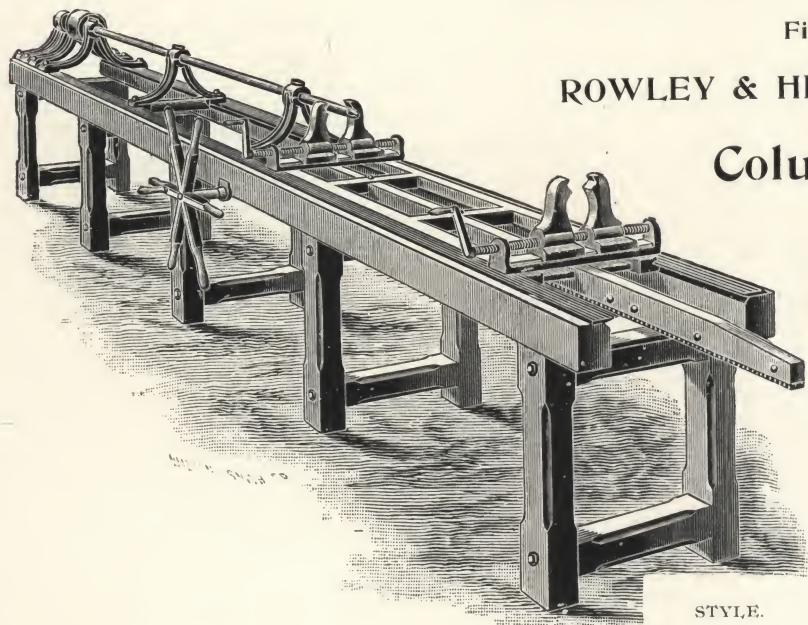


	Speed of Counter.	T. and L. Pulleys.	Weight.	Code Word.
Fig. 29 —With 3 Spindles.....	750	10 x 5 1/2	800	Ferret.
Fig. 29 A—With 4 Spindles.....	750	10 x 5 1/2	800	Ferrule.
Fig. 29 B—With 5 Spindles.....	750	10 x 5 1/2	800	Fervent.
Fig. 29 C—With 6 Spindles.....	750	10 x 5 1/2	800	Festal.

Fig. 30.

ROWLEY & HERMAN CO.'S

Column Boring Machine.



THE regular machine will bore a hole 1 1/2 or 1 3/4 through timbers up to 8 x 8 and 10 feet long, without drawing the auger. It is furnished complete in every detail, with one size auger, pulleys and hangers for operating.

Special Sizes Built to Order.

STYLE.	T. & L. Pulleys.	Revs. per Minute.	Approximate Weight.	Code Word.
Fig. 30—Regular Machine,	9 1/2 x 6	1000 to 1100	1400	Ferny.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 31.

F. H. CLEMENT CO.'S

Patent Double Chair Borer.

THIS is a novel departure from the usual style of Double Boring Machines and is the invention of a practical chair manufacturer.

The Distinguishing Features are that the boring spindles are adjustable apart on radius arms from 5 to 30 inches horizontally by a screw and hand wheel, and can also be set to a considerable angle from the vertical for chair seat work, legs, arms, etc., where two holes are necessary, one or both of which are at an angle, the table being also adjustable to an angle transversely to the adjustment of the spindles.

The Frame is all iron, cast in one piece, and is heavy and substantial. The base is large, so that when properly bolted down the machine will not sway or vibrate.

The Radius Arms which carry the spindles are pivoted to a sleeve having the driving countershaft for a center so that the belts are always taut. Suitable clamping wheels hold the arms rigidly to a heavy segment bar when set for work. The space of clearance from spindle to frame is 21 in.

The Spindles are of steel with ground journals, the upper end sliding in a long steel sleeve which in turn is journaled in a box 7 inches long; the lower spindle box is a steady box, and the slack may be taken up readily when necessary. The yokes carrying these boxes are swiveled upon the radius arms and may be adjusted to a considerable angle laterally both ways, as shown in the engraving, and held by clamping screws.

The Table is adjustable vertically 15 inches on a gibbed way which is cast on the frame, and it also tilts to an angle to and from the column so that work angled in both directions may be done without special jigs or forms.

The Foot Levers are so arranged that both may be worked simultaneously or separately, and they may be adjusted to different heights to accommodate boring to different depths, or bits of varying lengths. The connection of the foot levers to the boring spindles is by means of ball joints and swivels, which are adjustable for wear and are self-adjusting in every direction so as to avoid cramping of any of the moving parts.

Adjustable Screw Stop Rods are provided for each spindle which follow the latter to any point of adjustment either lateral or angular.

The Counter-Shaft is generally made 8 feet long, and the lower bearing is adjustable vertically on the column which is planed true at this point. Thus, by means of the swiveled ceiling hanger, shown in the engraving, any height of ceiling or line shaft may be accommodated. The T. and L. pulleys are $8 \times 4\frac{1}{2}$ inches, and should run from 1,000 to 1,200, giving the spindles 3,000 to 3,600 or more if desired. Our new self-oiling pulley is used.

The Design and Workmanship is excellent, and all materials are first-class. We take especial pains with the bearings, slides, joints, etc., to have them true and in perfect line so as to do accurate work quickly without heating or otherwise requiring more than ordinary attention.

Shipping Weight about 1,000 pounds. Horse power required 2 to 3.

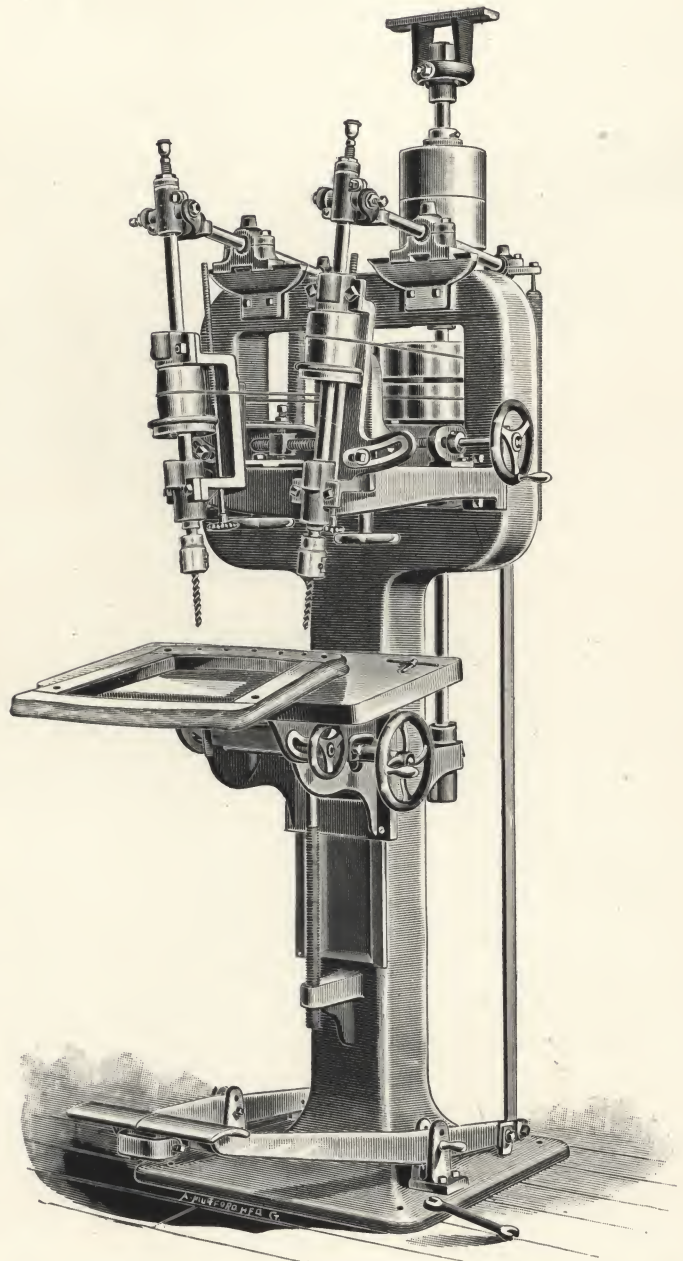


Fig. 31—Complete, with Self-Centering Chucks.....

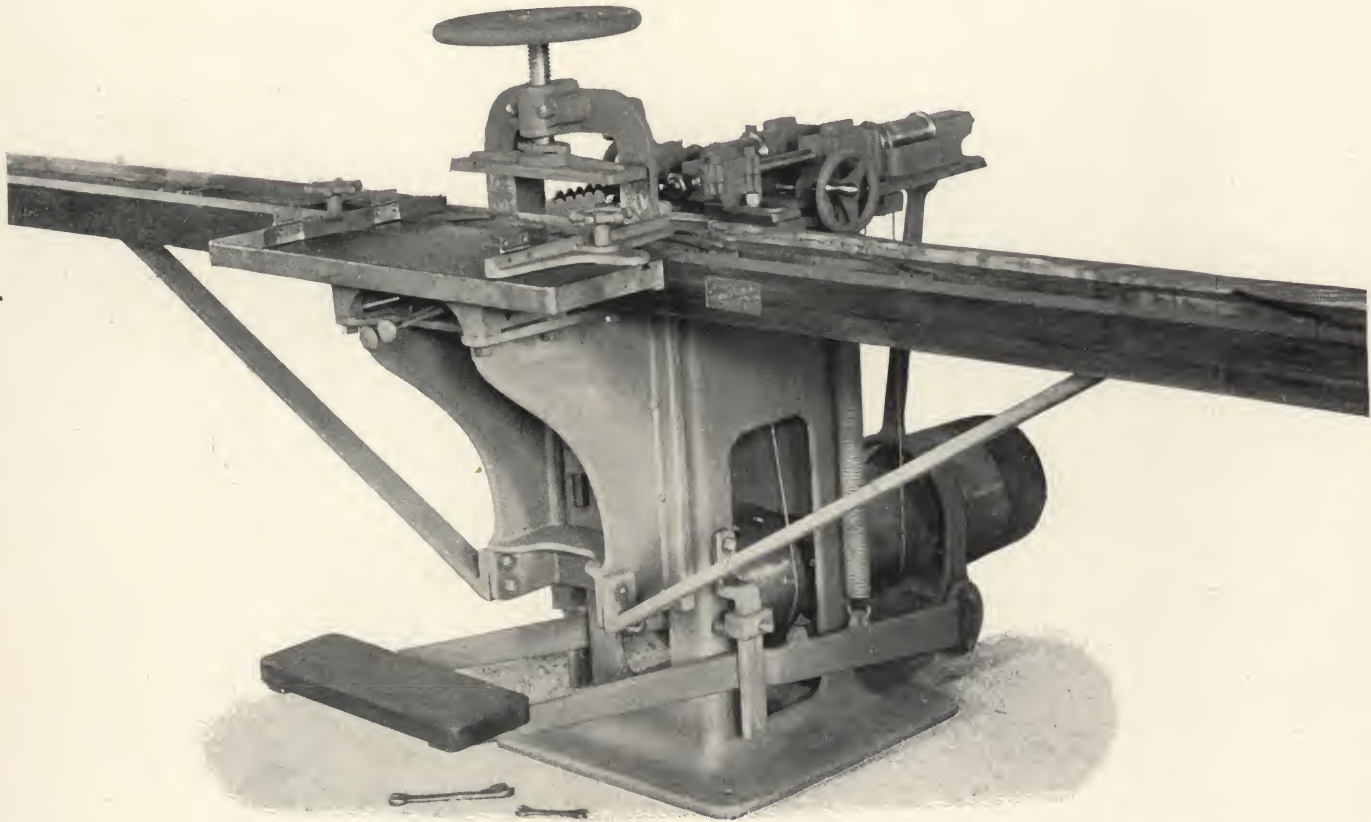
Code Word.
Fetters.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 32.

F. H. CLEMENT CO.'S

Double Dowel Door Borer.



MANY manufacturers are now using or expecting to adopt, the doweling system of putting up doors, in place of mortises and tenons. This is a substantial, well made Boring Machine, adapted to such work.

The Frame is cast in one piece and has a broad base.

The Table is supported on a heavy bracket having long ways which are cast on the frame ; this bracket supports the tables and clamping arch and is adjustable vertically by a screw and hand wheel.

The Boring Arbors are of hard steel and they can be adjusted from 2 to 6 inches apart each way from a center line, by means of screws and hand wheels.

The Foot Lever is rigidly attached to a vertical lever, which moves the arbor frame toward the work by means of a connecting link, and the whole is returned by steel coiled springs.

A Suitable Stop regulates the depth of the boring, which may be 5 inches or less.

The Clamping Screw has a very quick pitch and the follower plate can be faced with wood or leather.

The Gauges for the rails are both adjustable to and from the center line of the arbors, and they may be quickly slipped off when boring stiles.

The Side Tables extend nine feet each way from the center of the arbors, and are provided with adjustable stops for boring stiles at the required points.

The Design and workmanship are excellent in every detail and great pains are taken with the journals, boxes, slides and screws to have them accurately fitted.

The Counter-shaft is attached and has 10 x 4½ inch T. and L. pulleys, which should run about 800 per minute. **Weight**, about 1,200 lbs.

Capacity, from 150 to 200 doors per day. **Horse Power** required, 3.

Code Word.
Fendal.

Fig. 32—Complete, with two pairs of bits.....

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 33.

WILLIAMSPORT MACHINE CO.'S New Blind Stile Borer.

THIS is an Automatic Machine for spacing and boring blind stiles. It will bore two stiles at one time, space and bore the holes at any distance apart from 1 to 1½ inches.

The Machine is built upon a substantial column with broad base.

The Boring Spindles are mounted in a heavy frame with connected bearings, and have a vertical movement at each revolution of the feed shaft, to suit the depth of holes being bored.

The Spindles are driven from a shaft at the back, which has a geared connection with the feed shaft, which carries a crank wheel working in an elongated stirrup, by which the spindles are given a vertical movement at each revolution of the crank.

Our main improvement on this machine is our pressure rolls, each being independent of the other, so that if the stiles should vary any in width, this independent adjustment will hold them down solid on the table and bore each hole exactly the same distance from the edge of the stile. By loosening one screw these pressure rolls can be changed for different widths of stiles. This improvement will not be found on any other machine on the market and will be appreciated by all practical operators.

The Table and Guides are made of iron and steel so that they are always straight and in line, as is not the case where the tables and gauges are made of wood.

At each revolution of the crank on the feed shaft a gravitating ratchet arm carries the stiles forward a certain distance, when the boring spindles automatically rise, bore, and return to their former position. This is repeated until the stiles are spaced and bored.

The Steel Gauges are adjustable for boring holes at any distance from the face of the stiles.

We have special boring bits made for this machine which will not break as in former machines.

The Studs upon which the idler pulleys run are made hollow and oiled from the ends.

This machine, if properly handled, should bore 9,000 holes per hour.

Tight and Loose Pulleys 6 x 3 inches and should run 700 revolutions per minute.

We furnish all belts for this machine with the exception of main driving belt.

Shipping Weight, 500 pounds.

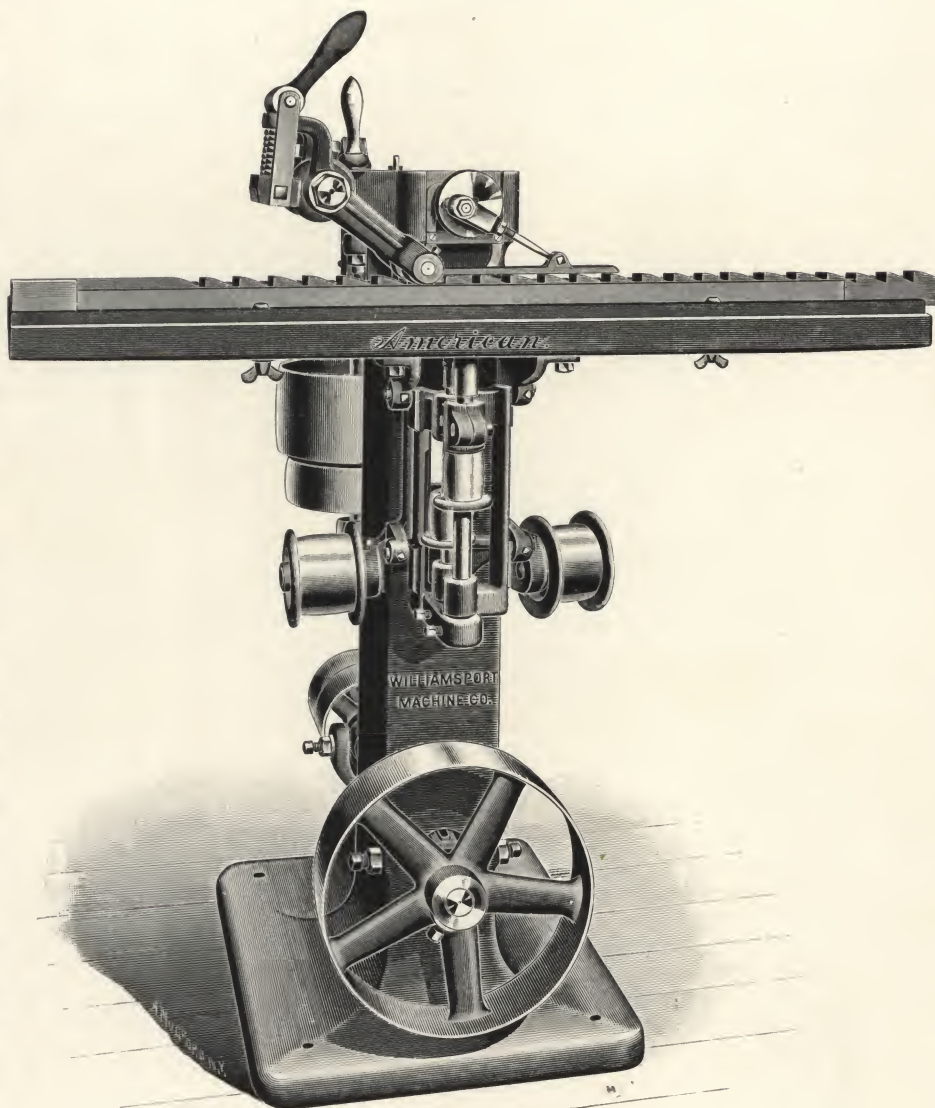


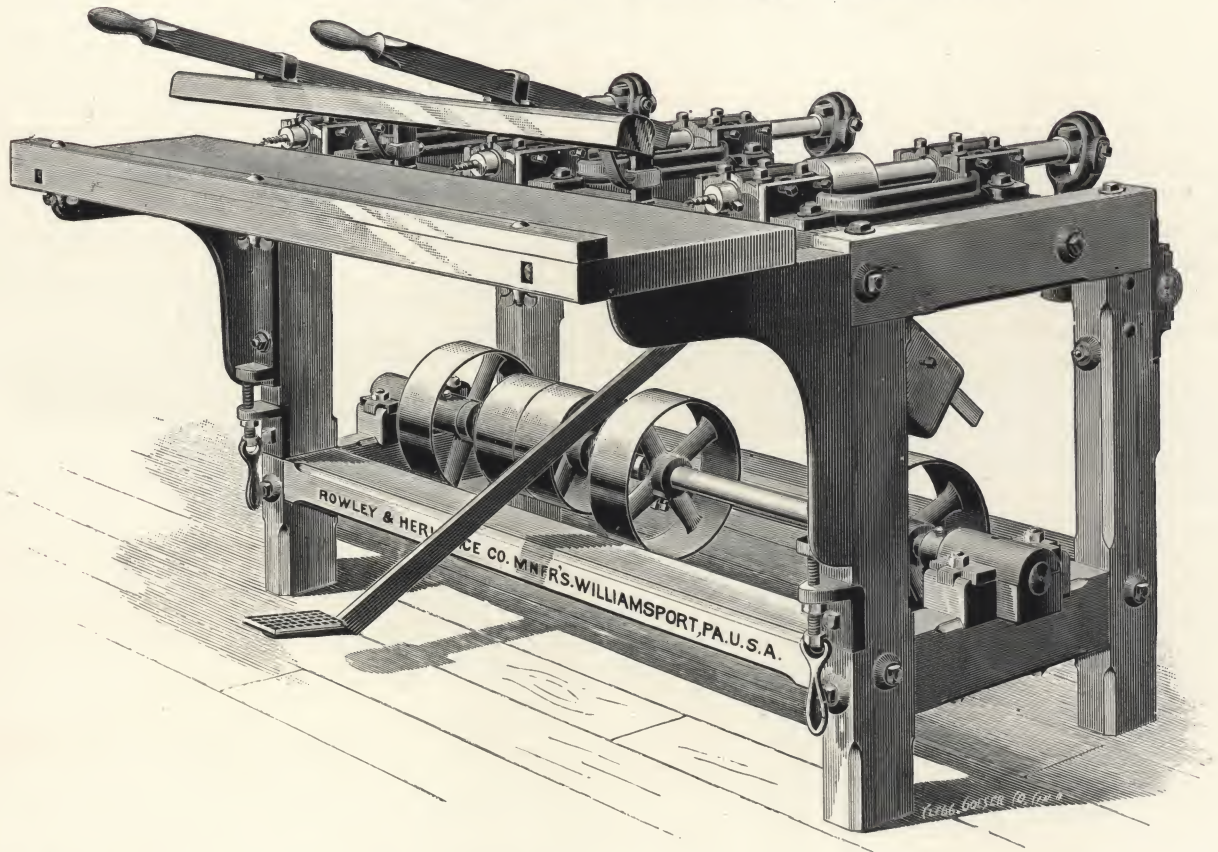
Fig. 33—New Blind Stile Borer, complete.....

Code Word.
Fibine.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 34.

ROWLEY & HERMANCO CO.'S Three-Spindle Boring Machine.



THIS machine can be built with any number of spindles required. It is intended for general work, and has been designed to accomplish with accuracy, at one operation that class of work in which a number of holes are to be bored, as in dowerling table tops, cabinet work, etc., etc., and is especially adapted for table and furniture factories.

The Frame is substantially built of thoroughly seasoned hardwood, securely bolted together with joint bolts.

The Spindles are made of the best quality of steel and run in genuine babbitt lined boxes. They are adjustable from 5 inches to 18 inches apart from center to center of spindles, or more if required, and are carried up to the work by a foot treadle. They have a horizontal movement of three inches.

The Table has a vertical adjustment sufficient to admit of boring in the center of a piece ten inches thick. **Pulley on Arbor** 8 x 4, and should run 450 revolutions per minute. Weight, 850 pounds.

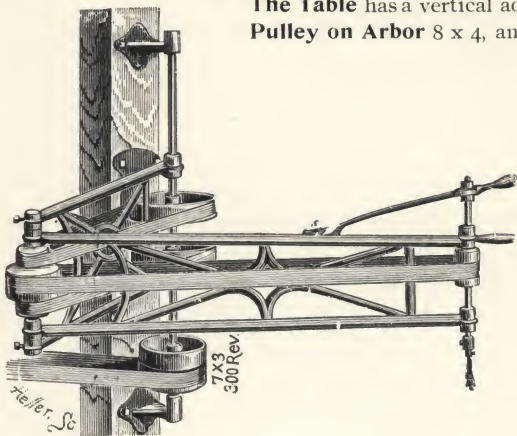


Fig. 35.

ROWLEY & HERMANCO CO.'S Pin Boring Machine.

ONE of the greatest labor saving machines in use. A boy will bore five holes with this machine to one with an ordinary brace and bit. It is operated by simply pressing the hand on a spring and on removing pressure the bit is immediately withdrawn.

These machines are coming into universal use.

Style, No. 2, 8 feet long, for doors and blinds.

Tight and Loose Pulleys, 7 x 3, which should run 300 revolutions per minute. Weight, 200 lbs.

Style, No. 1, 4 feet long, for sash.

Tight and Loose Pulleys, 7 x 3, which should run 300 revolutions per minute. Weight, 175 lbs.

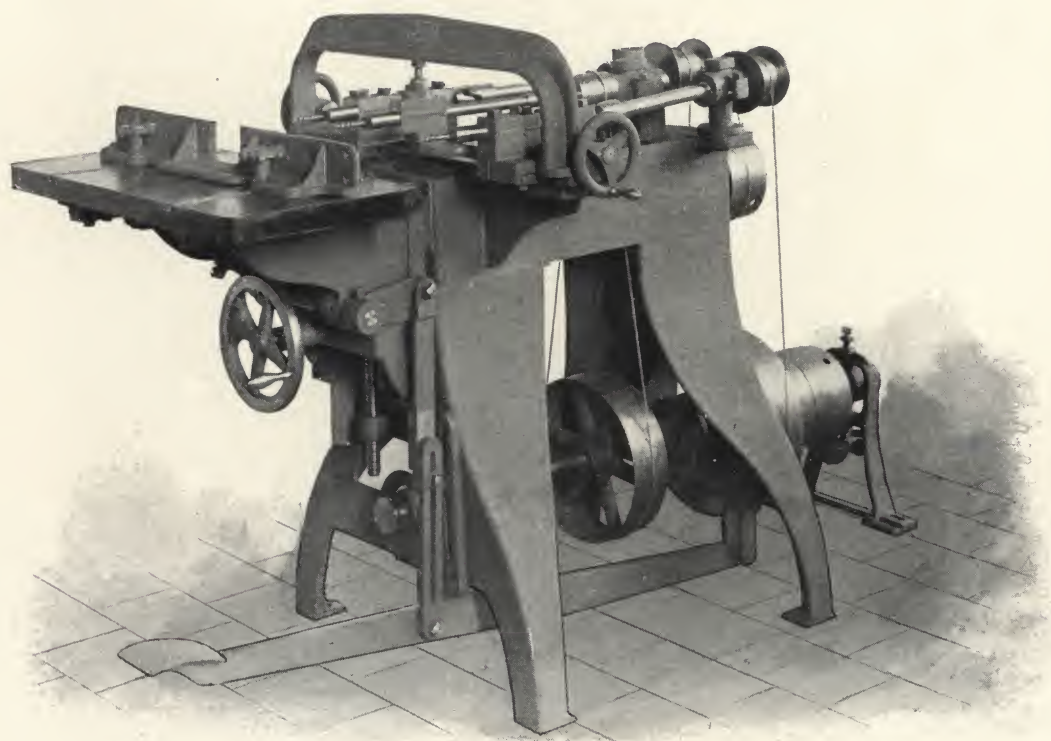
	Pulley on Arbor.	Revs. per Minute.	Cubic Measure.	Weight.	H. P. Required.	Code Word.
Fig. 34 —With 3 Spindles.....	8 x 4	450	30	850	1 to 2	Fickle.
Fig. 34 A—With 2 Spindles.....	8 x 4	450	28	750	1 to 2	Fiction.
Fig. 35 —No. 2, Pin Boring Machine, 8 feet long, for Doors and Blinds.....						Fiery.
Fig. 35 A—No. 1, “ “ “ 4 feet long, for Sash.....						Fighter.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 36.

F. H. CLEMENT CO.'S

New Triple Dowel Boring Machine.



WE have many calls for a machine to bore three holes close together for doweling and similar work, and this design has been made with reference to that and other parallel boring within the capacity of the machine.

The Frame is heavy and rigid and has cast upon it a cross slide upon which are carried double-bearing yokes for the adjustable spindles.

The Spindles are of Steel and all have divided boxes to take up wear. The central spindle has two stationary boxes on the frame, and the double boxes of the outside spindles are gibbed to the cross slide and adjustable to and from the central spindle by hand wheels and screws. The two outside spindles have hard steel universal joints and the rear boxes are swiveled to permit the adjustment.

The Outside Spindles are adjustable from $1\frac{1}{4}$ inch to 10 inches from the central spindle, while the machine is running.

The Table moves 6 inches horizontally on gibbed ways by means of the foot lever, and it can be adjusted vertically 9 inches by the hand wheel and screw shown. There is an iron gauge-bar or fence on the table, adjustable to an angle in slots across the table, but this attachment can be varied to order.

The Counter-Shaft has self-adjusting and adjustable boxes on the frame and a floor bearing outside of the pulleys. The tight and self-oiling loose pulleys are $8 \times 4\frac{1}{4}$ inches, and they should run about 500 per minute.

Every Detail is carefully worked out and the workmanship is excellent in every particular.

Shipping Weight, 900 pounds. Horse power required, about two.

Fig. 36—New Triple Dowel Boring Machine, complete.....

Code Word,
Figure.

Fig. 37.
ROWLEY & HERMAN CO.'S
New and Improved Screw Power Feed Door Clamp.



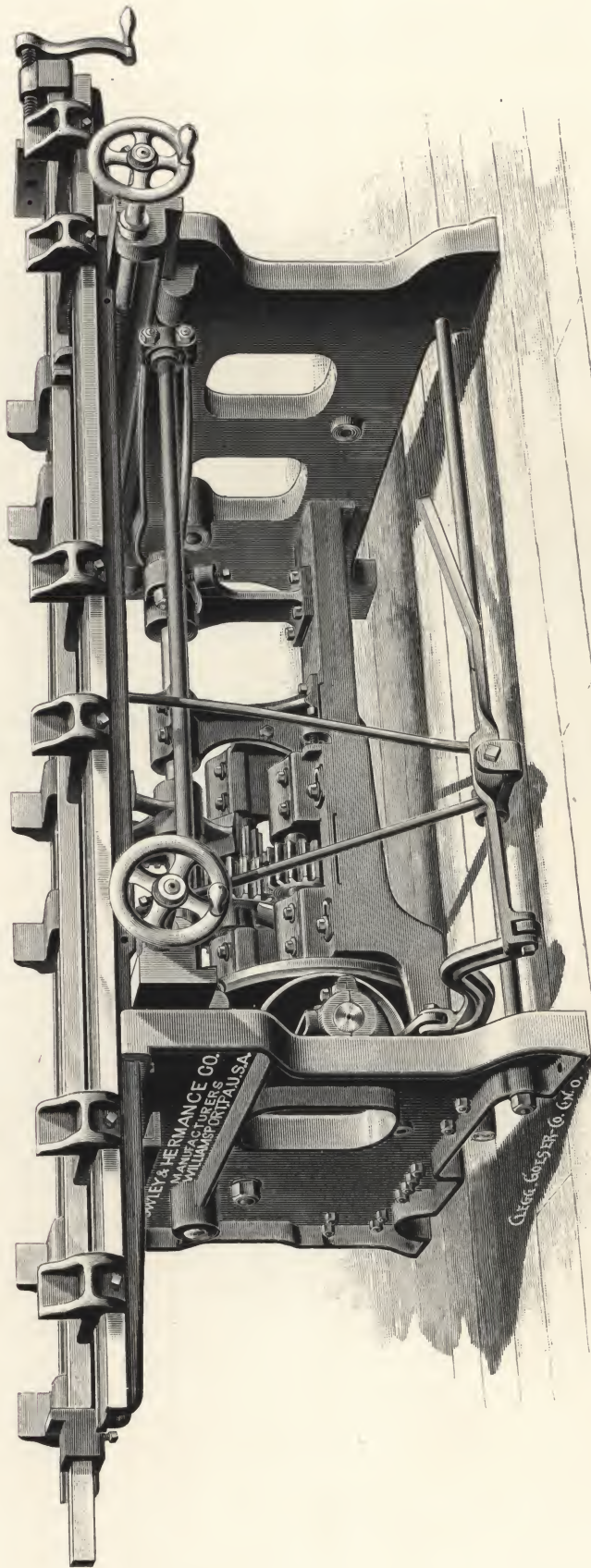
THIS cut represents our New and Improved Screw Power Feed Door Clamp, which is operated by large screws driven by powerful worm gears. The screws operating the movable slab are of steel and large diameter, with heavy square thread and provided with crucible steel nut on each screw. These screws pass through the stationary slab, and are provided with large solid collars, which bring the pressure or strain against the ends of the frame. The upright lever on the left hand end of the machine starts the clamp, and the horizontal lever at the same end will stop the operation at any desired point in case it is necessary to adjust a panel before giving a door its final pressure. The vertical lever on the right hand end of the clamp releases the door by reversing the clamp, and the horizontal lever on the same end will stop the movable slab at any desired point. The door is released by a slight pressure of the vertical lever on the right hand end of the machine, which reverses the motion and opens the clamp. In moving the back plate in either direction, as soon as the plate reaches the limit for which the machine is set, it strikes an adjustable collar which instantly releases the power and stops the motion. The collar or stop is adjustable for any width of door, up to the full capacity of the clamp, or 4 feet 6 inches, and after being set will clamp all doors to uniform size without any further adjustments. Another slight pressure on the lever on the left hand end of the machine starts the plate at the pleasure of the operator. The change from one size to another is quickly and easily made by moving the back plate forward or backward from the front plate and setting the collars, which are secured by a set screw on the bar at each end of the frame. The collar on the bar at the left hand end controls the forward movement, and the collar on the bar on the right hand end of the frame controls the reverse movement. This machine will clamp more doors in a given time and do better work than any other machine made, and equal pressure is given on each side of the tenon on each rail. The ends are clamped by the end bar provided for that purpose. The machine is built in two sizes: 8 feet long and 10 feet long. It will clamp 8 feet long in one motion, or twice that length in two motions; or 10 feet long in one motion, or twice that length in two motions, and both sizes will open 4 feet 6 inches wide. It is constructed entirely of iron and steel, planned perfectly true and designed for rapid and accurate work. The capacity of the machine is limited only by the ability of the operator to handle the work. Owing to its peculiar construction it is nearly if not quite UNBREAKABLE.

Fig. 37 —Size, 4 feet 6 inches by 8 feet.....	T. and L. Pulleys.	Revs. per Minute.	Cubic Measure.	Approximate Weight.	Average H. P. Required.	Code Word.
Fig. 37 A—Size, 4 feet 6 inches by 10 feet.....	12 x 3	1050	.....	3600	3 to 5	Fillet.
	12 x 3	1050	.....	4100	3 to 5	Filtrate.

Fig. 38.

ROWLEY & HERMANCO CO.'S

Power Feed Single Motion Door and Blind Clamp.



(PATENT APPLIED FOR.)

THE want of a Clamping Machine that will open wide enough to allow for the insertion of dowels for "blind tenon" work, and the constantly growing demand for a door and blind clamp to be operated by power, has induced us to bring out the first and only power driven single motion door and blind clamp ever placed on the market.

This machine is driven by powerful friction gearing which operates a heavy connecting rod. This rod is attached to the slides. By this arrangement the greatest pressure is applied when the joint is nearly closed, or where the resistance must be overcome. At this point the connecting rod falls slightly below the center line and holds the clamp closed until the door is wedged. The door is released by a slight pressure of the foot upon the lever, shown near the floor in front of the machine, which reverses the friction and opens the clamp. In moving the back-plate in either direction, as soon as the plate reaches the limit for which it is set the crank strikes an adjustable screw, which instantly releases the friction and stops the motion. Another slight pressure of the foot upon the other end of the same lever starts the plate forward when another door is to be clamped. The movable plate will open from 1 inch to 7 inches wide. The change from one size to another is quickly and easily made, by moving the back plate forward or backward with hand wheels fastened to screws that run through the width of the machine.

This machine will clamp more doors and blinds in a given time and do better work than any other machine made. An equal pressure is given on each side of the tenon of each rail, or increased pressure can be exerted on the wide bottom rail when desired. The ends are clamped by the end bar provided for that purpose. It will clamp any size up to 4 feet wide by 8 feet long, in one motion, or twice its length in two motions. It is constructed entirely of iron, planed perfectly true, and designed for rapid and accurate work. The capacity of this machine is limited *only* by the ability of the operator to handle the work.

Fig. 38 —To Clamp 4 x 8

Driving Pulley.	Revs. per Minute.	Cubic Measure.	Weight.	Average H. P. Required.	Code Word.
16 x 8	125 x 150	120	3,200	Nominal	Filagree.
Fig. 38 A—To Clamp 4 x 10 .....	.....	150 .....	.....	" .....	Filamen.

AMERICAN WOOD-WORKING MACHINE CO.

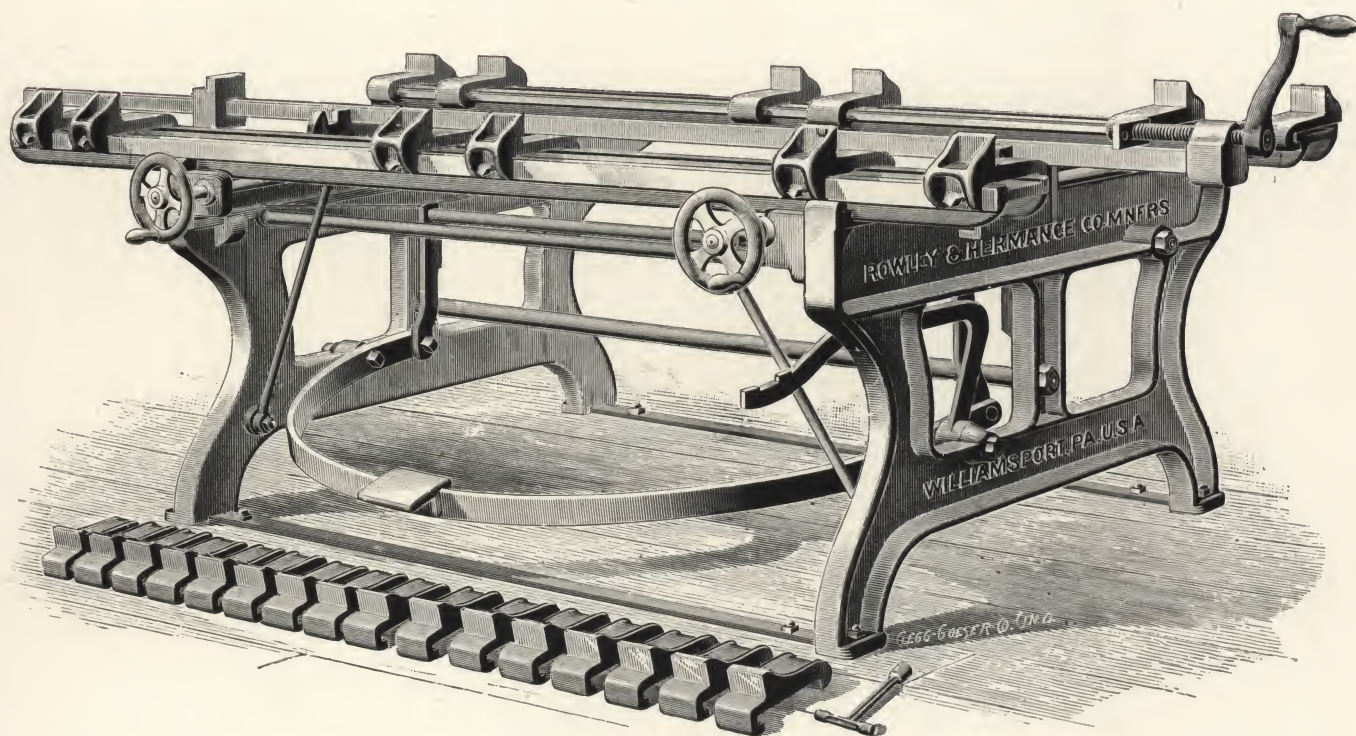
Fig. 39.

For Code Word see page 47.

ROWLEY & HERMANCE CO.'S

New Pattern

Improved Single Motion Door and Blind Clamp.



LADOW'S PATENT.

WE are the original builders of this Machine, and were the first to place it upon the market. Have built and sold over 1,100 of these machines, and improved it from time to time. A few firms have made an honorable attempt to produce as good a machine as above, but have not succeeded; others have copied our old pattern machines entire (please observe the "honorable" is omitted) therefore, we now introduce the strongest and heaviest machine in the market, with improvements for clamping the door or blind straight, making perfect joints on both sides (face and back) thoroughly well built, to be sold at as low a price as good work can be furnished, but do not expect to compete in price with poorly built machines.

It will clamp more doors or blinds in a given space of time, doing the work perfectly, giving pressure on each side of tenon of each rail, clamping ends as well as sides, and do better work than any other machine made.

It is explained by the cut, operated simply by pressing down *one* lever with the foot and moving the end screw by hand. It is also provided with a foot treadle for releasing the door and opening the clamp.

The change from one size to another can be made in less than one minute, by moving the back plate forward or backward with hand-wheels fastened to screws that run through width of machine.

It will clamp any size up to 4 feet wide by 8 feet long, in one motion, or twice its length in two motions.

It is the only first-class clamp in market that is made entirely of wrought and cast-iron. There are no ratchets to break, (as ratchets always will), and no pawls to get out of order. By our arrangement of levers the greatest pressure is applied when the joint is nearly closed or where the increased resistance must be overcome. At this point the cross rod passing through the four horizontal bars rises slightly above the center line, holding the clamp closed until the door is wedged.

We also make a sash attachment for this machine, which will clamp sash on four sides, perfectly square, in one motion. It can be taken off or put on in five minutes.

Four hundred pairs of blinds have been clamped on this machine in ten hours.

AMERICAN WOOD-WORKING MACHINE CO.

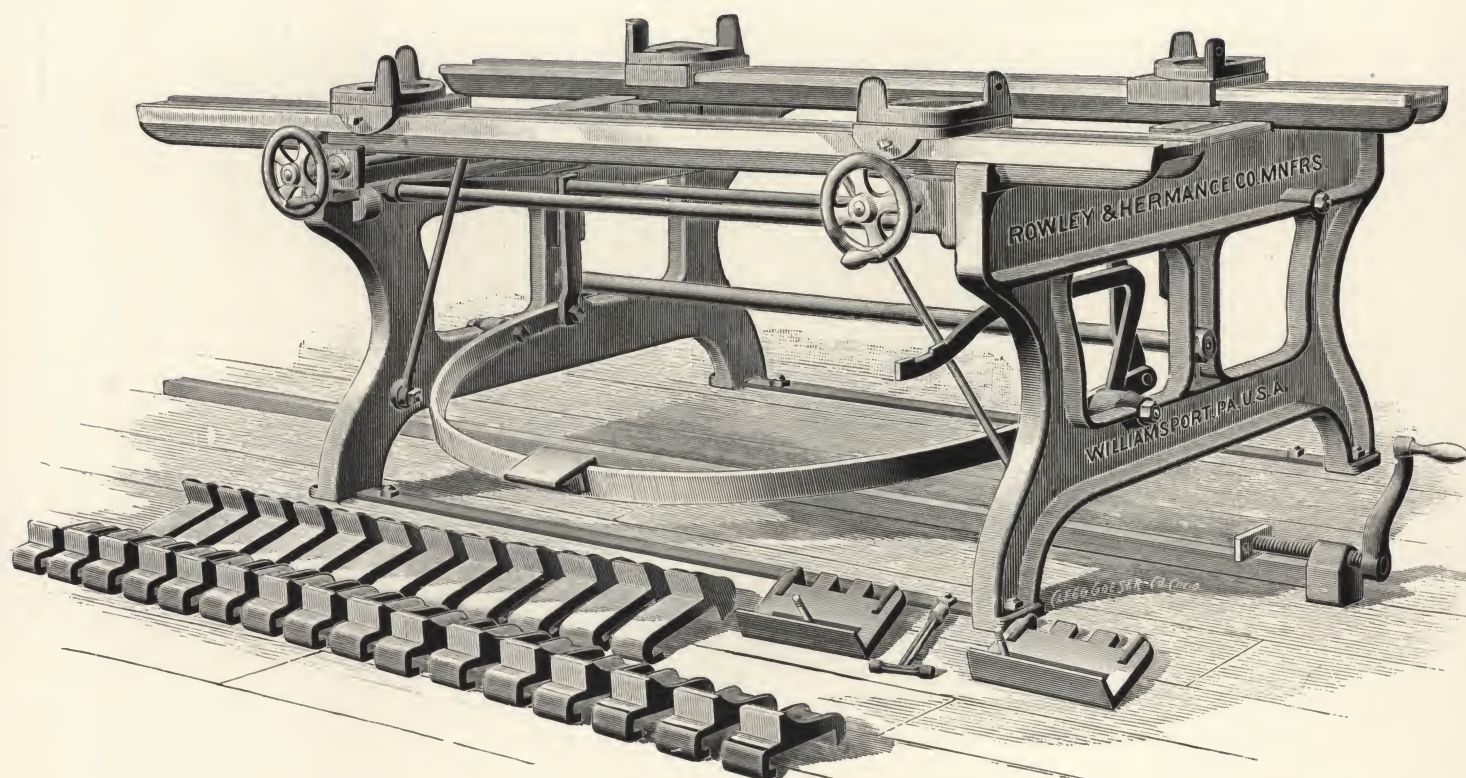
Fig. 39 A.

ROWLEY & HERMANCO CO.'S

New Pattern

Improved Single Motion Door and Blind Clamp.

WITH SASH ATTACHMENT.



LADOW'S PATENT.

THE above illustration shows the Sash Attachment we furnish with the clamp, when it is desired to use the same machine for clamping sash as well as doors, blinds and shutters.

The plates to which the corner blocks are attached have a circular groove and the corner blocks have a turned flange on the bottom to fit this groove; thus the corners swing in a true circle. There are two lugs on the corner block, one at a greater distance from the centre than the other to allow more pressure on *stiles* than on the rails. It can be set quickly for any size, and will clamp the sash square.

See What They Say of It.

THOMAS MCGEACHIE,
MANUFACTURER OF VENEERED DOORS,
CLEVELAND, O., Jan. 24, 1893.

MESSRS. ROWLEY & HERMANCO CO., Williamsport, Pa.

Gentlemen: Your door clamp is decidedly the best clamp on the market. I have used the clamp for about two years. One boy in my employ has clamped up 27 doors in one hour.

Some time ago, being in need of another clamp, a supply firm sold me a clamp which they guaranteed equal to or better than your clamp, at less price. I used the clamp about one week when one of the legs broke and delayed work until a new leg could be sent. Since then I have had two new legs on this machine, and each broke in the same place. I finally threw it into the scrap iron pile and bought one of your 10-foot clamps which is always in repair and giving excellent satisfaction. Worth double the price of any other clamp on the market.

Respectfully yours,

THOS. MCGEACHIE.

We furnish 12 long dogs for doors, and 16 short dogs for blinds, with each machine.

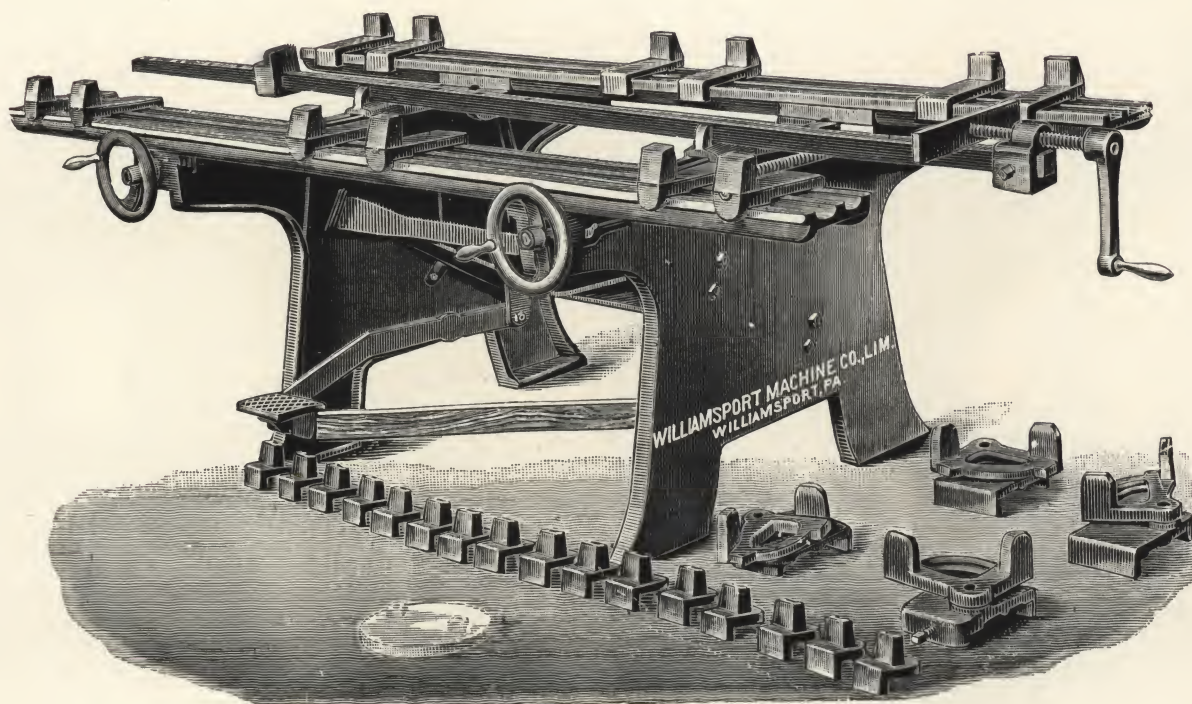
STYLE.	Cubic Measure.	Approximate Weight.	Code Word.
Fig. 39 —To Clamp 4 x 8 feet.....	31	1,700	Finary.
Fig. 39 A—To Clamp 4 x 8 feet, including Sash Attachment.....	31	1,800	Finely.
Fig. 39 B—To Clamp 4 x 10 feet.....	38	1,800	Finger.
Fig. 39 C—To Clamp 4 x 10 feet, including Sash Attachment.....	38	1,900	Finite.
Fig. 39 D—Blind Clamp, without End Bar, to Clamp 2 ft. wide by 8 ft. long.....	30	.....	Finless.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 40.

WILLIAMSPORT MACHINE CO.'S

Single Motion Door and Blind Clamp.



THE above cut illustrates our new style Door and Blind Clamp. The machine is built from entire new patterns of new designs, being strong, substantial and durable. For clamping doors considerable strain is used, and, to prevent any danger of breaking, we have made this machine equal to any demands that may be made upon it. The way in which we have arranged the levers in our clamp is the best in use, for the reason that when clamping a door we get the greatest leverage when the door is nearly clamped, or where the greatest pressure is required.

The Clamp is operated by simply pressing down one lever with the foot, and turning the end screw by hand. The clamp, being self-acting, holds securely until the foot lever is raised.

The Front Slab is connected to the levers and foot treadle, and has an adjustment of $1\frac{7}{8}$ inches.

The Back Slab is adjusted forward or backward by the hand wheel attached to strong screws, the same running the whole width of the machine. This adjustment gives the quick change to the different sizes to be clamped, which will be found on no other machine. If desired, the machine can be so regulated that a greater pressure can be obtained on one end of the door than the other. The machine will clamp any size up to four feet four inches wide by eight feet long, by one single motion of the foot treadle, or can be made with greater capacity, if so ordered.

With each machine we furnish 12 long dogs for clamping doors, and 16 short dogs for clamping blinds. We also make sash attachment for this machine, as shown in cut, which will clamp sash all four ways, perfectly square, at one operation. This attachment can be taken off or put on in a very few minutes.

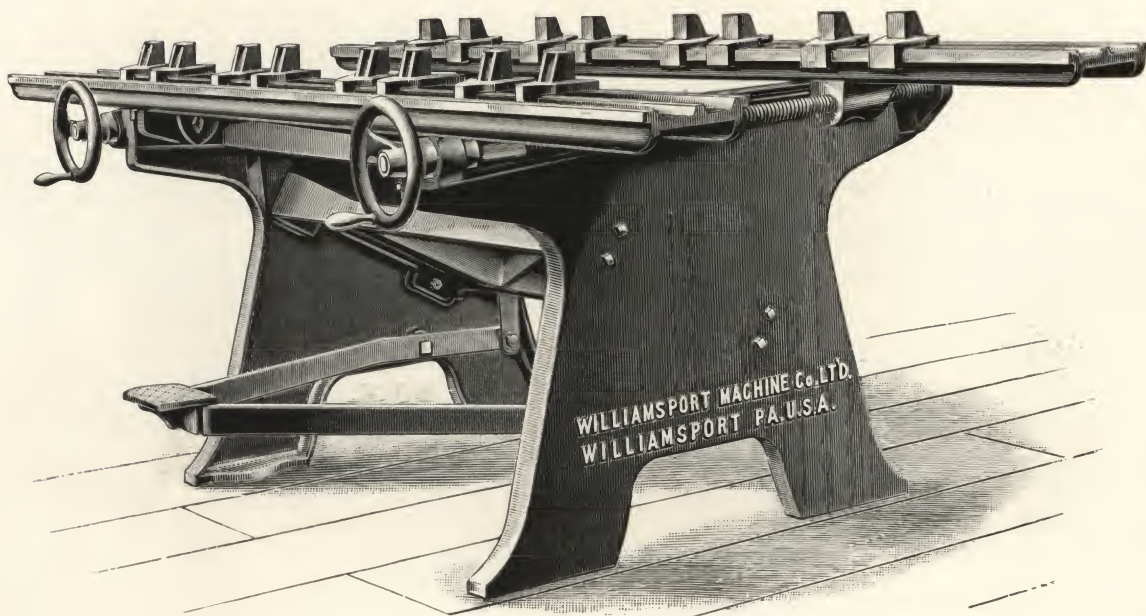
We will send one of these machines to any responsible party in the United States on thirty days' trial, and if not satisfactory, to be held subject to our order.

Fig. 40—Complete, Single Motion Door and Blind Clamp.....	Weight. 1,400 lbs.	Code Word. Firkin.
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AMERICAN WOOD-WORKING MACHINE CO.

Fig. 41.

WILLIAMSPORT MACHINE CO.'S New Blind Clamping Machine.



Specially Adapted for Clamping Inside and Outside Blinds.

THIS cut represents our New Blind Clamp, designed with special care, being strong, substantial and durable, and the amount of work it will do makes it a very desirable machine for any Blind Factory.

The Frame is entirely of iron, the necessary parts of which are planed true; it is very rigid and well braced, enabling it to withstand any demands that may be made upon it.

The Clamp is operated by simply pressing down one lever with the foot, and being self-acting, holds securely until the foot lever is raised.

The Front Slab on the clamp is connected to the levers and foot treadle; the back slab is adjusted to the different widths of blinds by hand-wheel attached to strong screws, the same running the whole width of machine. This adjustment gives quick change to the different sizes to be clamped. If desired, the clamp can be so regulated that a greater pressure can be obtained on one end of the blind than the other.

The machine will clamp any size from four inches up to thirty inches wide, eight feet long, by one single motion of the foot treadle.

We furnish with each machine sixteen short dogs, and each machine is thoroughly tested before leaving our works and fully guaranteed in every respect.

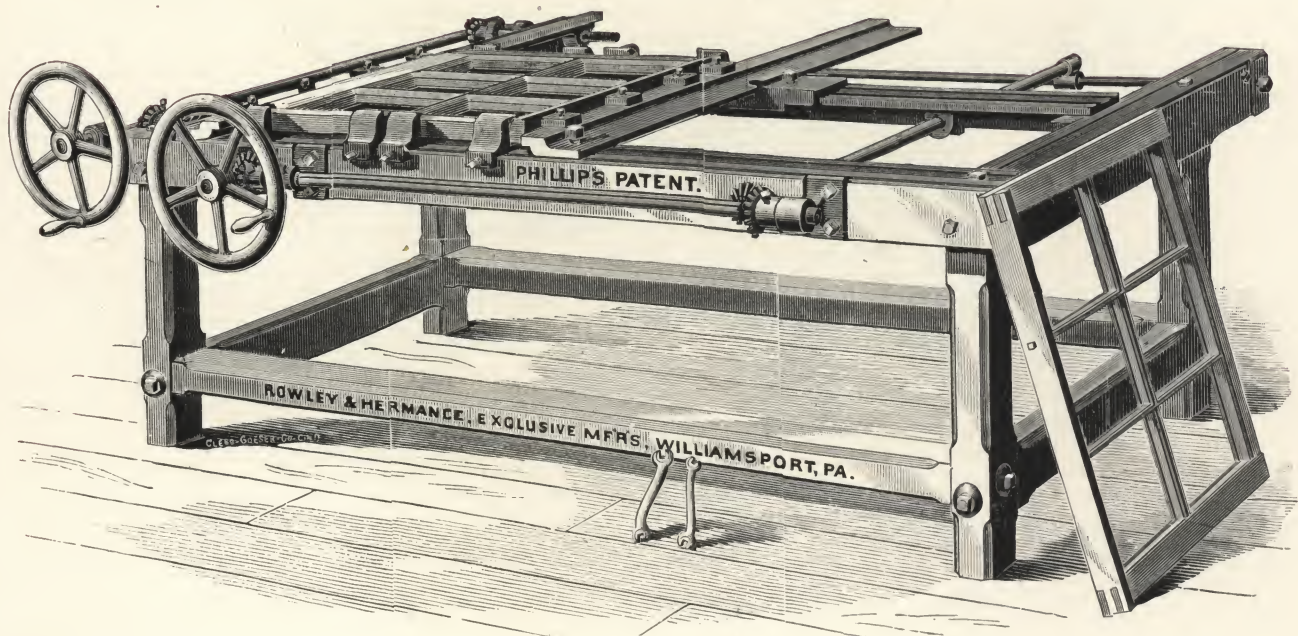
Fig. 41—Complete, New Blind Clamping Machine.....	Weight. 1,000 lbs.	Code Word. Firman.
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AMERICAN WOOD-WORKING MACHINE CO.

Fig. 42.

ROWLEY & HERMANCO CO.'S

New Improved Sash Clamp.



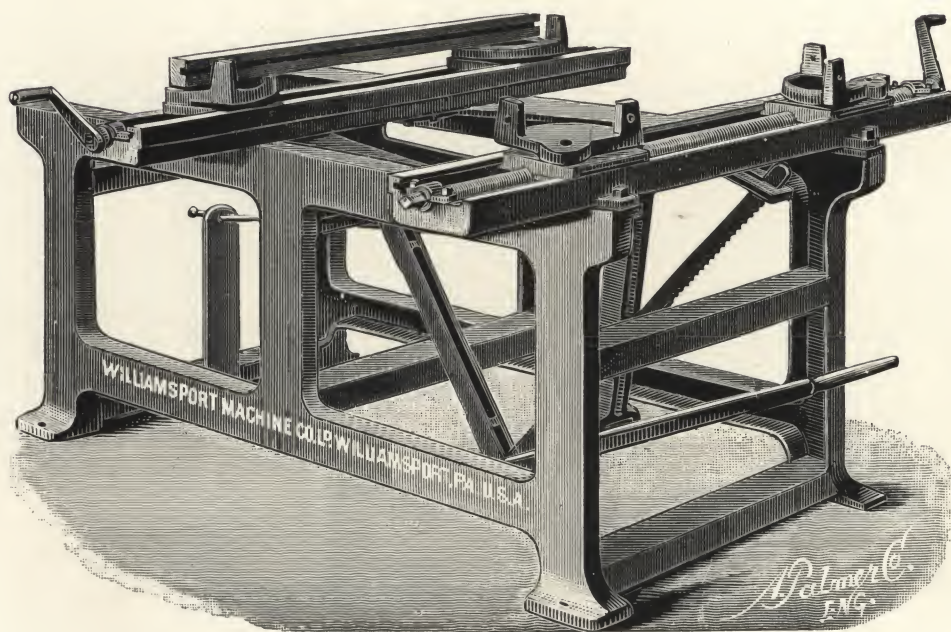
THE above cut represents a new and improved machine for clamping sash, and is now for the first time introduced to the public. The chief difficulty with all machines heretofore invented is that they cannot be depended on to clamp the sash perfectly square, and that in changing from one size to another the machine must be "squared up" before the work can be done, a process causing the loss of valuable time. Every operator knows that it is cheaper to clamp "odd sized" sash, or a small lot of a few windows of one size, with the old style screw clamp, than to adjust any of the patent sash clamps now in use. The above machine is the first sash clamp ever made that is absolutely square at all times, and with which odd sizes can be clamped as quickly as stock sizes. The cut explains the operation of the machine. By turning the large hand-wheels the sash is clamped on all sides at once perfectly square. The pressure on the stiles and rails is independent of each other and can be regulated at will, a very important point in doing good work.

SIZE.	Cubic Measure.	Approximate Weight.	Code Word.
Fig. 42—Complete, to clamp 4 ft. x 6 ft. to 1 ft. x 2 ft.....	64	950 lbs.	Fiscal.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 43.

WILLIAMSPORT MACHINE CO.'S Iron Frame Sash Clamp.



All Four Corners Clamped at One Operation.

SASH manufacturers have long felt the want of a good Clamping Machine that could be found always reliable in clamping sash square. We have constructed it entirely of iron and steel, as these machines have heretofore been made with wood frames, which would soon rack and not clamp sash square.

The Main Frame of this machine is cast in one piece, making it perfectly rigid.

The Heavy Top Rails are planed, and have long slabs or bearings on the main frames.

The Corner Blocks for holding the sash are pivoted to the traveling blocks, which work on the top of the heavy rails, and are operated in and out by a right and left hand screw, whereby each corner can be moved an exact distance from the centre, and remain in a rigid, fixed position. When once adjusted for one size, and set, it always remains perfectly square. Odd sizes of sash can be clamped almost as quickly as regular sizes.

This clamp is very heavy and strong in every respect. We think we are safe in saying it has no equal on the market, and, by its use, from fifty to seventy-five per cent. of labor is saved over other methods of clamping sash. It not only brings every joint up to its place, but makes the sash perfectly square, clamping the four sides at one operation by simply pressing the lever down with the foot.

Either pins or wedges can be used. Its capacity is to work sash up to 3 feet 10 inches by 5 feet, and down to 12 inches square.

Fig 43—Complete, Iron Frame Sash Clamp

Weight.
950 lbs.

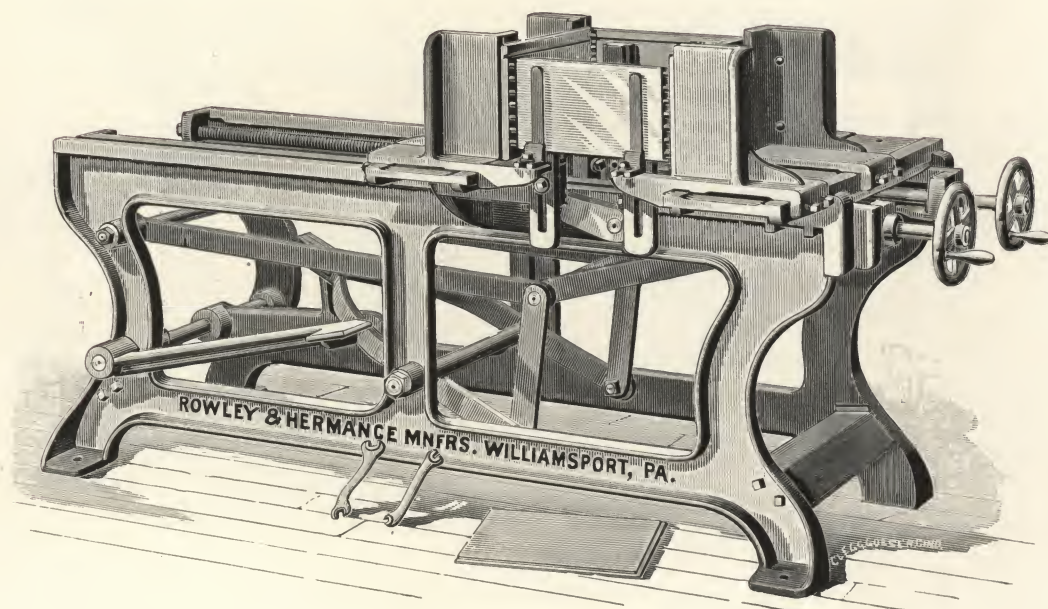
Code Word.
Fishery.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 44.

ROWLEY & HERMANCE CO.'S

Drawer Clamp.



THE above cut represents a new and most complete machine for clamping drawers for all kinds of furniture work. It is simple, easily operated, quickly adjusted and very powerful.

It consists of a strong, well balanced frame, on which are mounted two plates; one is stationary and the other slides, by means of two screws operated by hand wheels, a distance sufficient for the length of any drawer. On these are placed upright pieces which may be adjusted for any width of drawer, and which support the front, back and ends, at the same time bringing each piece in its proper position.

The Pressure is applied by a system of levers actuated by a treadle convenient to operator, as shown in cut. After the drawer has been clamped, the machine will instantly release it by slightly lifting the treadle with the foot.

The Upright Parts are so arranged as to allow all surplus glue to fall below, thus preventing it from sticking to the machine and making rough surfaces.

It is very substantial in all its parts and not liable to get out of repair.

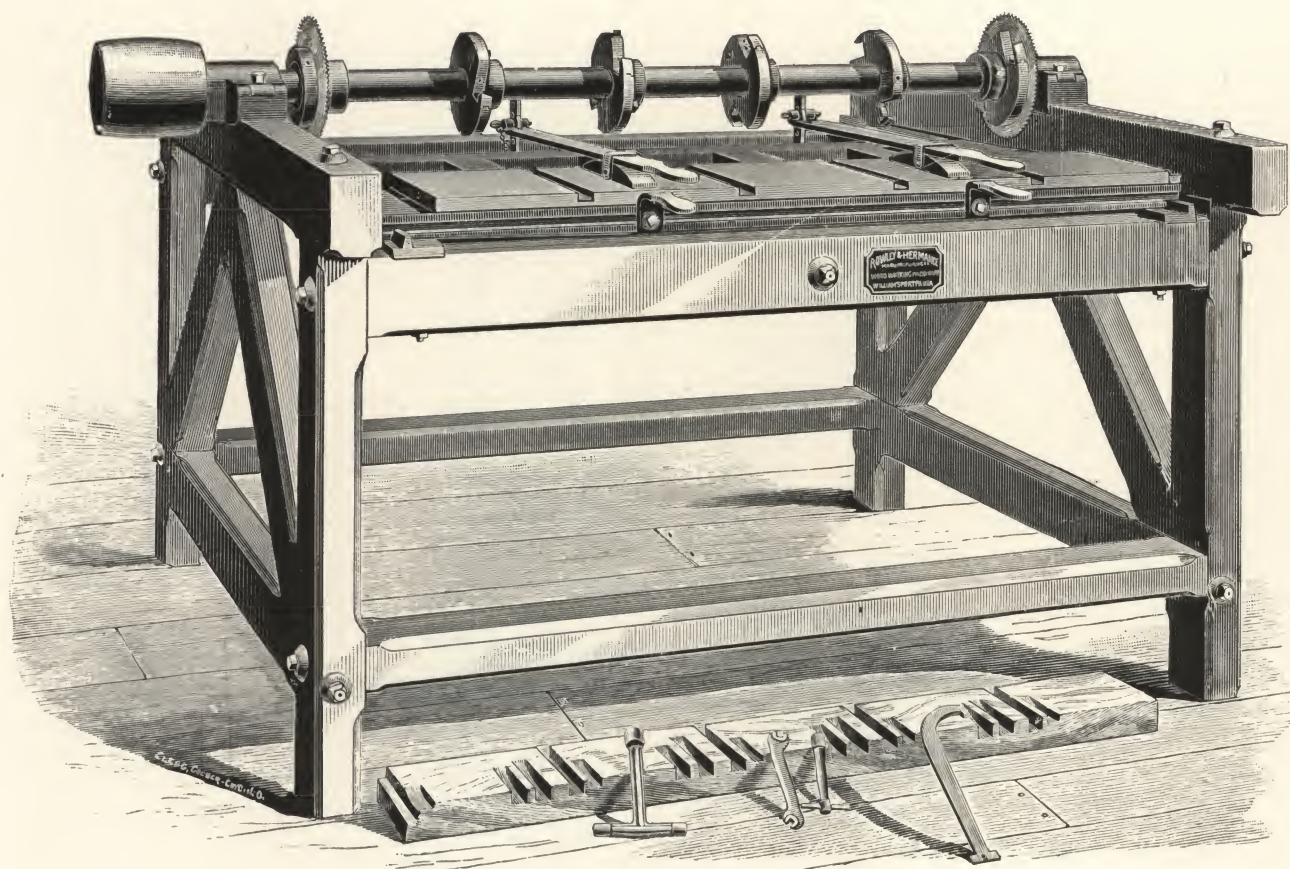
SIZE.	Cubic Measure.	Approximate Weight.	Code Word.
Fig. 44—Complete, to clamp 3 feet 6 inches long to 2 feet wide x 12 inches deep,	45	600	Fitful.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 45.

ROWLEY & HERMAN CO.'S

New Dado Machine.



THIS machine is designed for furniture factories—for case ends, cupboard and sink ends, and any work where it is desired to cut one or more grooves at one operation.

The Arbor is of steel, large in diameter, and runs in self-oiling boxes.

The Heads, five in number, are adjustable to any position on the arbor, and are fitted with our Patent Corrugated Spurs, and the bits are of such form that a shearing cut is obtained, and the usual tremble produced by the cutting knives (which is always felt when using straight knives) is entirely avoided. Sharpening the knives does not change the form of cut nor diameter of cutting circle, and they are so made that when taken out to sharpen very little time is consumed in resetting them.

One End of the Arbor is provided with a cut-off saw, attached to one of the heads and cutting on a line with the outer edge of the dado bit; this produces the proper form for one end of the piece being worked. This head and saw is in halves, and may be quickly removed and placed in any position on the arbor, and the heads not needed may be slipped along next the box, out of the way.

The Other End of the Arbor is also provided with a cut-off saw, mounted on a sliding or adjustable collar, and the case end in one operation is grooved, and both ends accurately cut to length.

The Carriage is of iron, accurately planed on the top, and runs on carefully fitted iron V ways.

This machine may be belted from above or below, or at any angle.

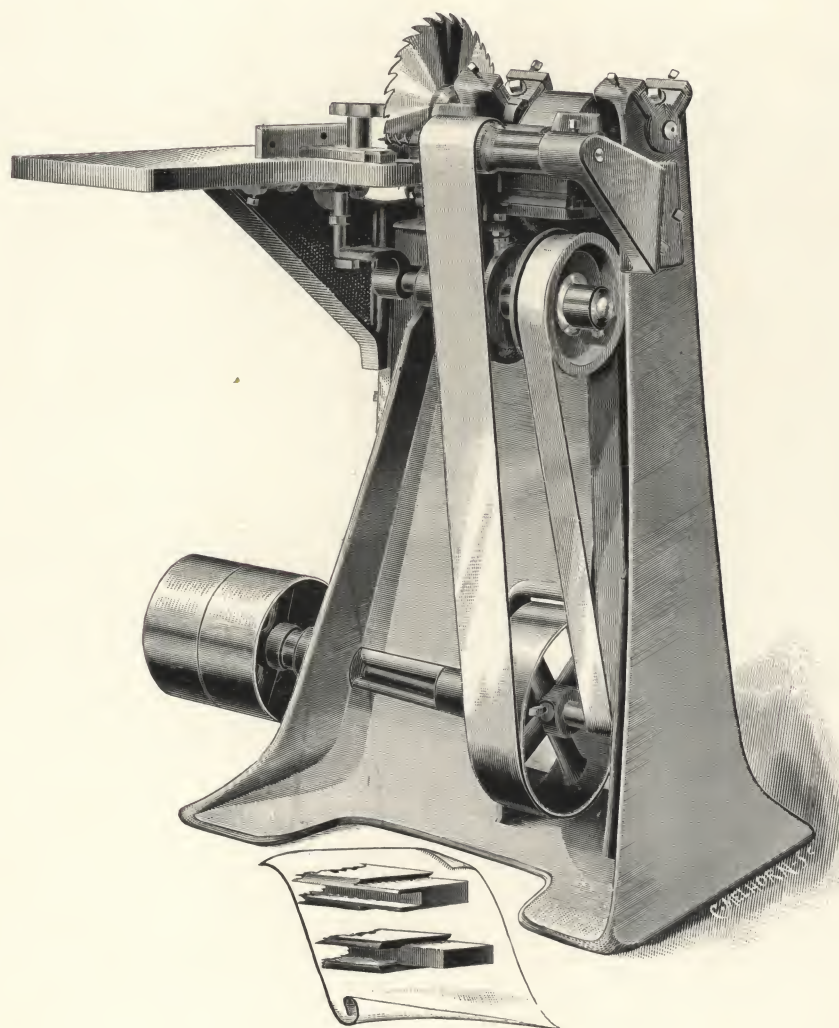
STYLE.	Pulley on Arbor.	Revs. Per Minute.	Cubic Measure.	Approximate Weight.	Average H. P. Required.	Code Word.
Fig. 45—Complete, with 5 Dado Heads and 2 Saws,	6 x 5	3,000	28	1,200	.....	Fitness.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 46.

ROWLEY & HERMANCO CO.'S Automatic Door Trimmer.

A NEW LABOR-**SAVING** MACHINE.



IN making doors it is sometimes desired to use panels thinner than the tenons. In grooving the rails and muntins for thin panels the groove being narrower than the tenon, it leaves material on each side of the tenon that must be trimmed off. This is usually done by hand with a knife or chisel. The above machine is designed to do this work. The rail or muntin is placed against the guide and the saw trims off the surplus material for square edged doors. When O. G. work is to be trimmed the saw trims the tenon lengthwise and a boring bit (which works automatically) bores out the surplus back of the shoulder or the tenon.

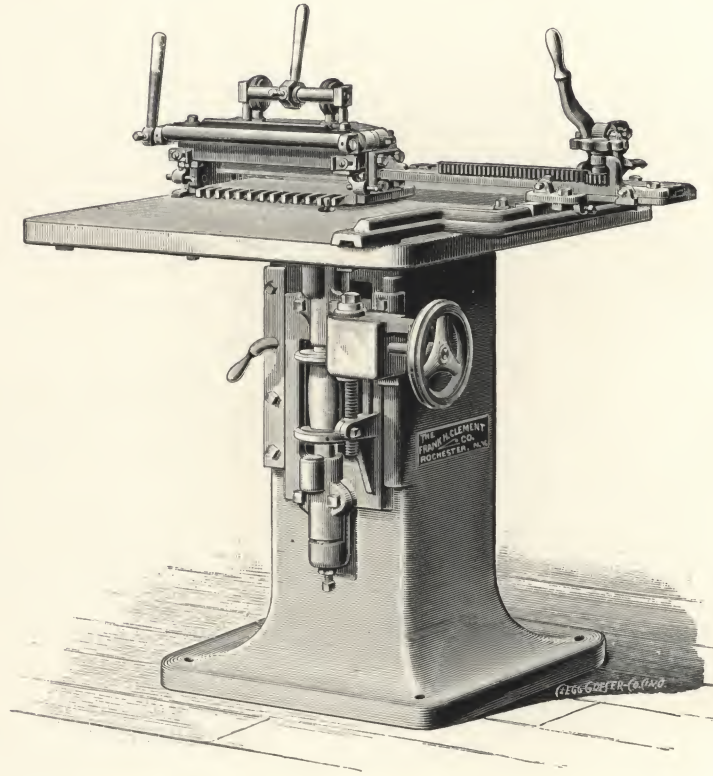
	Tight and Loose Pulleys.	Revolutions per Minute.	Cubic Measure.	Weight.	H. P. Required.	Code Word.
Fig. 46—Automatic Door Trimmer,	6 x 3	900	20	700	1	Fixture.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 47.

F. H. CLEMENT CO.'S

New Independent Dovetailer and Variety Shaper.



(DOVETAILING ATTACHMENT SHOWN REVERSED.)

THIS is a new design recently brought out and is very solid, compact and durable in every part.
The Frame is cast in box form, with slide ways for the spindle yoke cast upon it.

The Spindle is of cast steel, with journals 6 inches long ground true (not filed), and the boxes are carefully scraped to them.

The Caps are planed into ledges and have self-oiling cups cast upon them.

The Table is of iron, 32 x 36 inches.

The Upper End of the spindle is bored and threaded to receive either a stem for shaper knives or a chuck for dovetail cutters, and we furnish the chuck and three cutters with the machine. Shaper spindles will be extra.

Two Sizes of Dovetailing Attachments are furnished, one to cut 13 inches and one 18 inches wide. They are bolted to the top of the table and can be readily removed.

A Counter-Shaft is usually included, adapted to dovetailing only; but when it is desired to use the machine for a shaper, our Improved Friction Reversing Counter should be ordered.

Tight and Self-Oiling Loose Pulleys for the Dovetailer are 8 x 3 3/4 inches, and should run about 900.

Shipping Weight, 750 pounds. **Horse Power** required, about two.

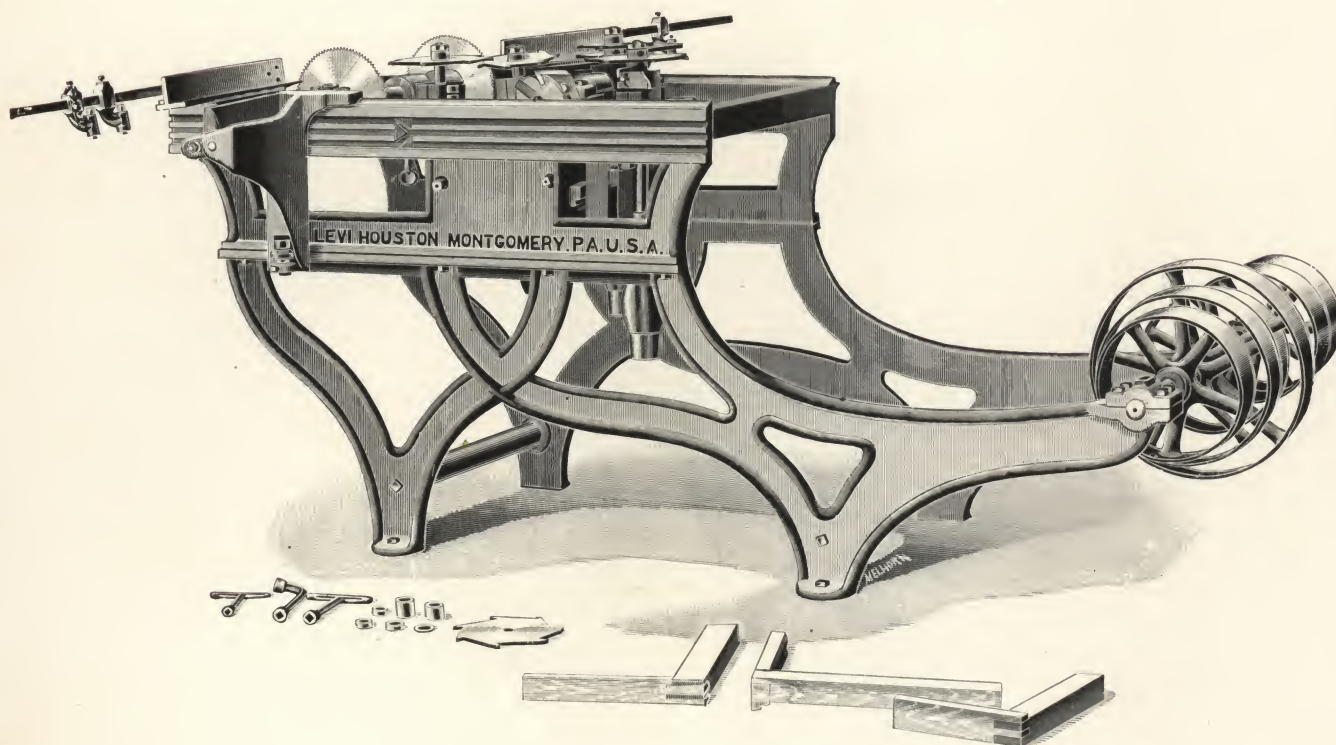
Fig. 47 —13-inch Independent Dovetailer and Counter.....	Code Word.
Fig. 47 A—18 " " " " " "	Fizgig.
Fig. 47 B—Extra for Reversible Counter	Flabby.
Fig. 47 C—Extra for Shaper Spindle with Nine Collars.....	Flaccid.
	Flakes.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 48.

THE LEVI HOUSTON CO.'S

No. 2 Sash Dovetailing Machine.



THE accompanying cut represents an improved machine for dovetailing the stiles and check or meeting rails for sash. It is so constructed that it finishes the end of a check or stile by passing it through the saws once. This saves much time over former methods and also insures perfect work. The one side of the machine is fitted with a **sliding table, two upright mandrels** carrying heavy saws which complete the dovetail on stile with once passing through. The other side is also provided with a sliding table, two upright and one horizontal mandrels.

The Upright Mandrels carry heavy saws and a coping head, and the horizontal mandrel carries a cutter head. These complete the tenon on check or meeting rails at one operation. The machine is also provided with a **horizontal mandrel**, carrying two adjustable cut-off saws, by which the material worked on each side of the machine is cut to the required length.

The Tables and mandrels are adjustable to suit the different thickness and width of material to be worked. Both tables are fitted with rollers at lower bearing to overcome friction. The small switch-block inside of machine is made to invert to change from top to bottom checks, and to reverse to change from dovetail to slip sash.

Belts: Two belts 10 feet 10 inches long, 3 inches wide; one belt 9 feet 5 inches long, 3 inches wide; one belt 8 feet 2 inches long, 3 inches wide; one belt 12 feet 11 inches long, 2 inches wide; one belt 9 feet 11 inches long, 2 inches wide.

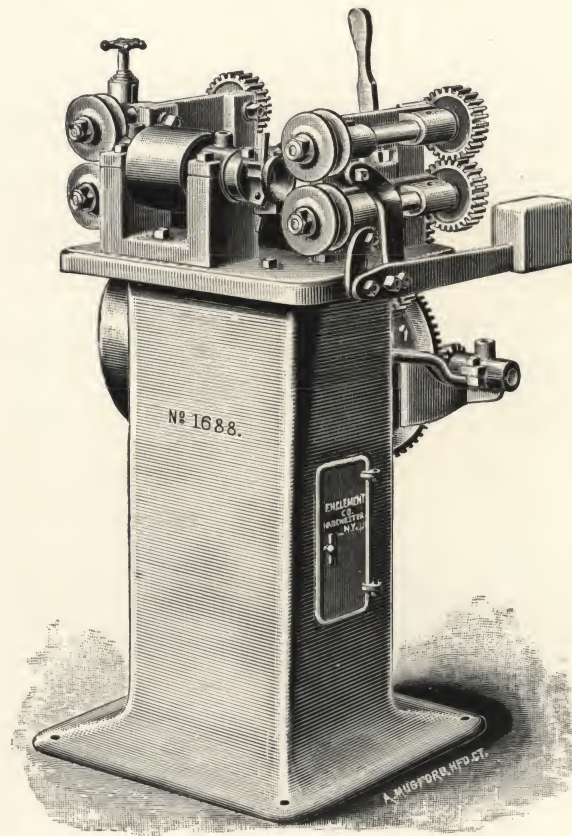
	Speed of Counter.	T. and L. Pulleys.	Weight.	Code Word.
Fig. 48—Complete, No. 2 Sash Dovetailing Machine	800	10 x 4	800	Flame.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 49.

F. H. CLEMENT CO.'S

New High Grade Rod and Dowel Machine.



THE Engraving shows a fine first-class Rod or Dowel Machine, embodying many improvements, and thoroughly designed and built in every detail. The frame is cast in one piece and is provided with a tool closet.

The Main Arbor is of cast steel, with the pulley pressed on, and the bearings are almost double the length of other machines of this kind, carefully ground (not filed). The diameter of the journal is thus reduced as much as possible and every precaution taken against heating, even at very high speeds.

The Feed Works on No. 1 and No. 2 sizes consists of two pairs of rollers, all driven, and provided with extra heavy gearing; on No. 3 there are three pairs of rolls, four of which are driven. The feeding-in rolls are self-centering and heavily counter weighted; they will thus accommodate large variations in the rough stock without wedging or stopping the feed. The feeding-out rolls are grooved in pairs to nicely fit the stick after turning, and ample pressure is applied to them by a strong spring which is adjustable by a hand-wheel. All the rolls can be removed in a few seconds.

There are Three Speeds on the feed cones and the gearing is reversible by means of a hand lever, so as to feed out bad stock. All these parts are extra strong and carefully fitted.

The Cutter Heads are threaded into the arbor and have usually two knives which are easily replaced and simple to grind. They are fastened by steel clips and hardened screws.

An Over-Head Counter-Shaft is furnished, with adjustable hangers, self-oiling loose pulley and feed cone to match the cone on the machine. No pains have been spared to make these tools reliable in every particular, and there are no "traps" or parts of doubtful utility in them.

Two Cutter-Heads and 8 (two set) Feed Rolls are furnished with each No. 1 and No. 2 machine, and 12 rolls with the No. 3. Three sizes are made, according to the following schedule of dimensions.

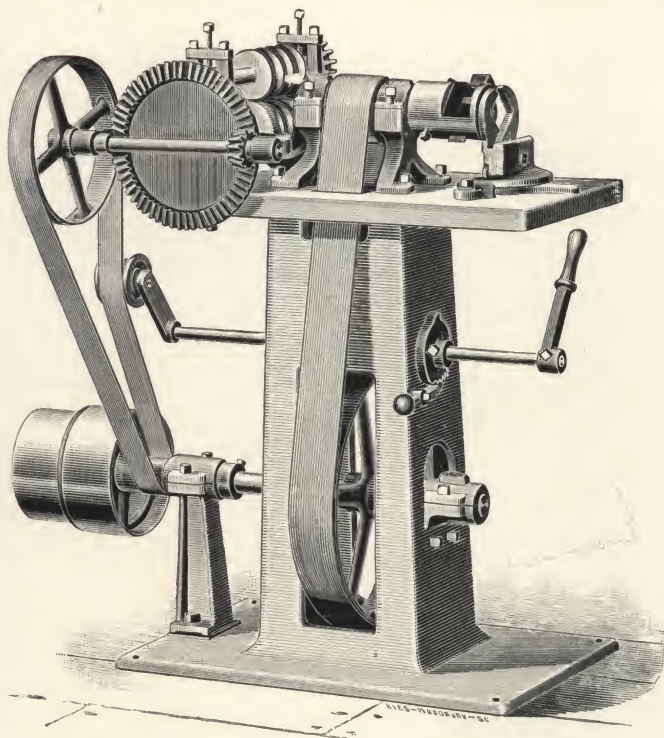
	Number of Machine.	Turns to	Speed of Head.	Shortest Length Turned.	Size of Arbor Pulley.	Speed of Counter-Shaft.	T. and L. Pulleys.	Shipping Weight.	Code Word.
Fig. 49	—No. 1	1¼ in.	4500 to 5000	16 in.	4½ x 3¾ in.	1000 to 1100	8 x 4½ in.	700	Flannel.
Fig. 49 A	—No. 2	1½ in.	4000 to 4500	18 in.	5 x 4½ in.	1000 to 1100	10 x 5¼ in.	900	Flapper.
Fig. 49 B	—No. 3	2 in.	3600 to 4000	20 in.	6 x 4½ in.	900 to 1000	10 x 6¼ in.	1000	Flaring.
Fig. 49 C	—Extra sets of Feed Rolls								Flash.
Fig. 49 D	—Extra Cutter-Heads								Flasque.
Fig. 49 E	—Extra Knives								Flative.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 50.

C. B. ROGERS & CO.'S

Power Feed Rod Machine.



DESIGNED for turning round rods of various sizes within the range of capacity of each size of machine as shown below ; separate head required for each size of rod.

These Heads are supplied with three knives : roughing knife for reducing the stick to size, a smoothing or finishing knife and a feed knife for assisting the feed. The hand feed machine consists of a mandrel with hollow arbor for holding the head. **This Mandrel** may be fastened to bench or any convenient point and belted from countershaft.

There is an **adjustable guide** to prevent stock from turning. In the case of the power feed machine the above named parts are mounted on a substantial iron frame with counter-shaft attached, from which the arbor and feed are driven.

The Feed consists of a pair of rolls, provided with grooves on arbor, size to correspond with size of rods to be turned, placed at rear end of mandrel and driven by a set of gearing belted direct from counter-shaft.

Machines are built in the following sizes :

- No. 1 Rod Machine, working to $\frac{5}{8}$ -inch **diameter, pulley** 2½-inch diameter by 2¼-inch face, speed 3,500 **revolutions.**
- No. 3 Rod Machine, working to 1⅜-inch **diameter, pulley** 3½-inch diameter by 3½-inch face, speed 3,000 **revolutions.**
- No. 5 Rod Machine, working to 2 -inch **diameter, pulley** 4 -inch diameter by 4½-inch face, speed 2,500 **revolutions.**
- No. 6 Rod Machine, working to 3 -inch **diameter, pulley** 5 -inch diameter by 5½-inch face, speed 2,000 **revolutions.**

No. 1 size is made with hand feed only. Counter-shaft for No. 3 and No. 5 power feed machine has tight and loose pulleys 8½ x 3½, and should make 600 and 500 revolutions per minute respectively. No. 6 machine has 8½ x 5 pulleys and should make 675 revolutions per minute.

Fig. 51.

F. H. CLEMENT CO.'S

Hand Feed Dowel Machines.

THESE machines are made in three sizes, viz. : No. 1 to turn $\frac{7}{8}$ inches, inclusive ; No. 2 to 1⅜ inches, and No. 3 to 1⅞ inches.

The Cutter Heads are threaded into the arbor, so as to change sizes, and a **stick holder** is provided so as to keep the stock from turning around.

Unless otherwise ordered, two knives are put into each head, and they are so arranged as to cut very freely and be readily removed for sharpening.

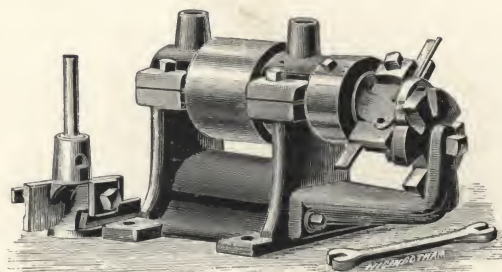


Fig. 50 --No. 1. Power Feed Dowel Machine.....	Code Word,
Fig. 50 A--No. 3. " " " "	Flatlong.
Fig. 50 B--No. 5. " " " "	Flatly.
Fig. 50 C--No. 6. " " " "	Flaxen.
Fig. 51 --No. 1. Hand Feed Dowel Machine, with one Cutter Head	Flayer.
Fig. 51 A--No. 2. " " " " " " " "	Fleece.
Fig. 51 B--No. 3. " " " " " " " "	Fleeting.
Fig. 51 C--Extra Heads	Fleshy.
	Flew.

AMERICAN WOOD-WORKING MACHINE CO.

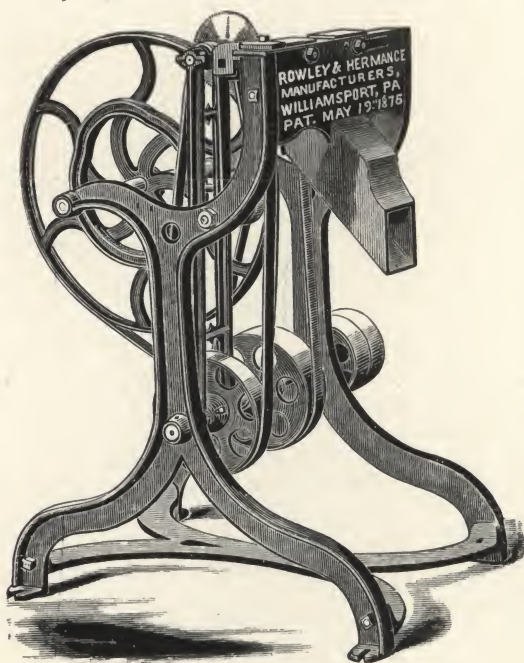


Fig. 53.

ROWLEY & HERMANC CO.'S Dowel Compressor.

THIS machine is intended for compressing grooves in dowels. **The Rollers** are made of hardened steel, in which grooves of different sizes are turned, and are adjustable for more or less compression, as desired.

The Dowels, either in long or short lengths, are placed between the rollers and the wood is compressed (not cut out). When the glue is applied to the dowel it fills the grooves the full length of the dowel, making it perfectly tight, whereas when plain dowels are used the glue is forced out of the hole and the dowel soon becomes loose.

The regular machine has two sets of grooves, viz: $\frac{1}{2}$ inch and $\frac{3}{8}$ inch, but can be made with three sets of different sizes to order.

Fig. 52.

ROWLEY & HERMANC CO.'S Eureka Pin Making and Pointing Machine.

CUTS and points from 80 to 130 pins per minute, either $\frac{1}{4}$ or $\frac{5}{16}$ inch diameter, and any length from $\frac{1}{2}$ to 4 inches, leaving them round or square. Every pin perfect. The only machine in the market that will make and point pins, cut them off at any desired length, and leave them round or square.

The Pins are rounded by passing through a hollow mandrel, and pointed by a rotary pointing cutter.

The Cut-off Saw is operated by a cam, and is automatic. It is indispensable in every sash, door and blind factory, as by the present method pins are pointed by hand. Every machine warranted to give satisfaction or no sale. We only ask for a trial.

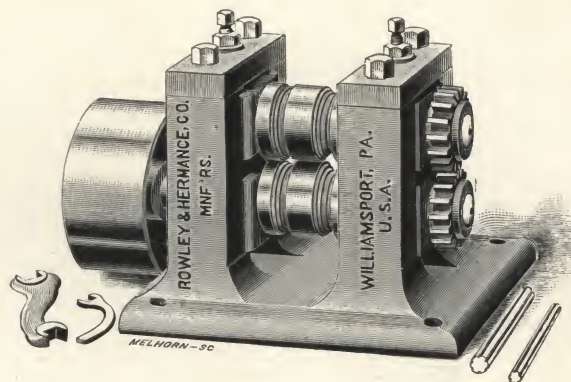
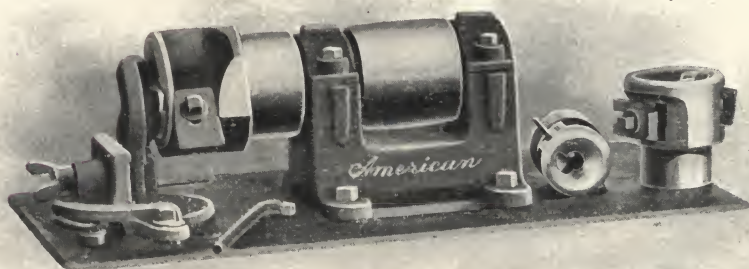


Fig. 54.

C. B. ROGERS & CO.'S Hand Feed Pin and Dowel Machine.



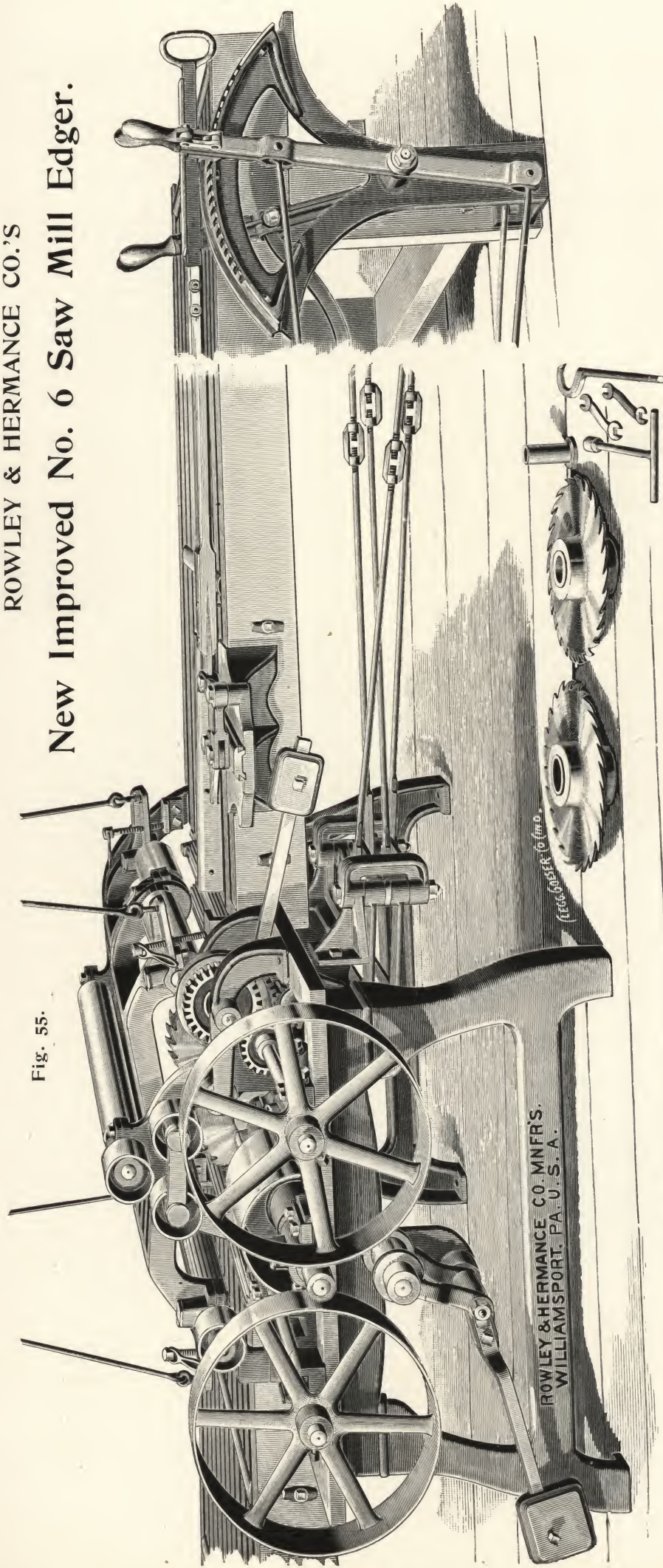
THIS Hand Feed Dowel Machine may be supplied with heads of any desired size up to the capacity of the various sizes as specified for each number, these sizes being included in regular quotation. The head is the well-known two-knife type, easy and smooth cutting.

No. 1 working rods to $\frac{5}{8}$ inch.
No. 3 working rods to $1\frac{1}{8}$ inch.
No. 5 working rods to 2 inches.
No. 6 working rods to 3 inches.

	T. and L. Pulleys.	Revs. per Minute.	Cubic Measure.	Weight.	H. P. Required.	Code Word.
Fig. 52.....	6 x 2	1200	21	200	1	Flexon.
Fig. 53.....	8 x 3	300	2	150	....	Flimsy.
Fig. 54 —No. 1.....	$2\frac{1}{2}$ x $2\frac{1}{4}$	3500	....	50 to 100 lbs.	....	Flinch.
Fig. 54 A—No. 3.....	$3\frac{1}{2}$ x $3\frac{1}{2}$	3000	....		....	Flinger.
Fig. 54 B—No. 5.....	4 x $4\frac{1}{2}$	2500	....		....	Flirted.
Fig. 54 C—No. 6.....	5 x $5\frac{1}{2}$	2000	....		....	Floatage.

ROWLEY & HERMANCO CO.'S New Improved No. 6 Saw Mill Edger.

Fig. 55.



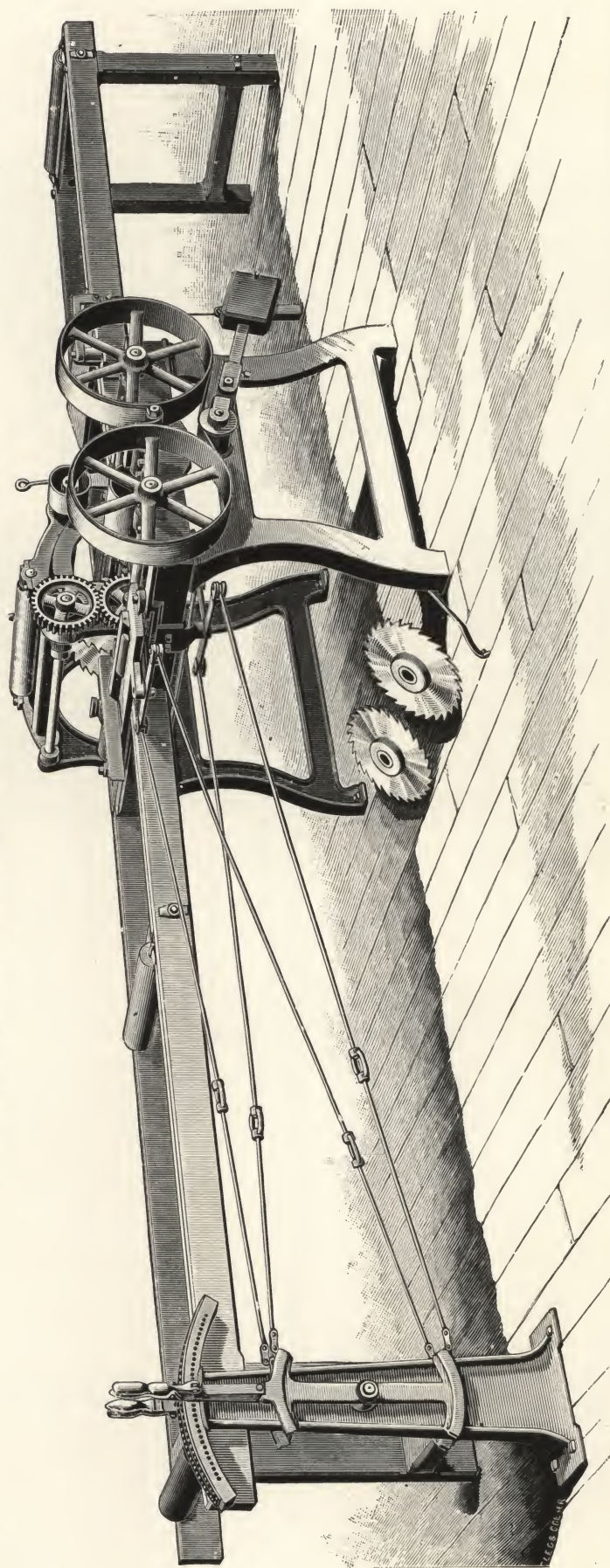
VIEW OF LEFT HAND MACHINE.

THE above illustration shows our Improved Double Edger, built from new patterns and designed for edging boards in saw mills, and sawing plank or boards, from the circular, gang or muley, into joist, scantling, flooring, etc., etc. It has four fluted rolls in the bed, two driven rolls in front and one idle roll back of the saws, all are adjustable and can be aligned to the arbor, thus insuring perfect work. There is also a sectional binder roll on top in front of the saws, a driven fluted out-feeding roll on top, and a driven spiked return roll for returning lumber to the operator when necessary. The live rolls are driven by a powerful system of gearing. The arbor is very heavy, made of the best steel and double key-seated; carries five saws, and has three large, long bearings, running in our improved self-oiling boxes. Our improved device for removing the saws is the best and most substantial in use. It is fitted accurately to the end of the frame and is as tight and solid as the frame itself; and by loosening three bolts, to which are attached our swivel wrenches (a special feature of our own), the end is removed and the saws exchanged in the shortest possible time.

It will edge 39 inches wide by 6 inches thick, finished size, and will take through 42 inches wide by 6 inches thick. It will cut from 1/4 inch to 9 inches wide between the gauge and the first or stationary saw, and as narrow as 3 inches between the other saws. It will edge a board and cut stock at one operation; and has a capacity of 100,000 to 125,000 lineal feet per day of ten hours. This edger is very valuable when used in connection with a circular, gang or muley saw, as the logs can be sawed without slabbing or siding up, and the boards straightened with the edger, thereby increasing the daily output of the mill and effecting a great saving of lumber. We furnish with each machine three stationary collars, two adjustable collars, five 18-inch saws, and the wooden tables with seven iron rolls for conveying the lumber to and from the saws. The cut shows a left hand machine, but we build it either right or left hand as ordered.

Fig. 55 —Improved No. 6 Saw Mill Edger.....	Driving Pulley on Arbor.	Revs. per Minute.	Cubic Measurements.	Weight.	H. P. Required.	Code Word.
Fig. 55 A—Counter-shaft, extra, with T. and L. Pulleys.....	12 x 12	2,000	234	4,500	6 to 12	Flock.
Fig. 55 B—Five Inserted Tooth Saws, extra.....	14 x 12	858	6	350	.....	Flogger.
						Flooring.

Fig. 56.
WILLIAMSPORT MACHINE CO.'S
Self Feed Gang Ripping Machine.



AFTER 20 years experience in building Gang Ripping Machines, we have now got out our new and improved machine which we claim has no equal in the market. It is capable of ripping 100,000 feet of stock lumber in ten hours. The feed rolls being all driven, make it a strong and positive feeder. The arbor is made of steel double key-seated, and runs in long, self-oiling boxes. The arbor carries two saws, one being stationary and the other adjustable by our improved set-works. The gauge is also controlled by set-works.

An improvement, to which we would call your special attention, is a swinging end bar, with sliding box for changing saws. This is a labor saving improvement, of unusual importance, and is constructed with special reference to easy access and quick change of saws. All operators will appreciate this point, as the saw can be taken off the arbor without removing a single bolt or screw. It being only necessary to loosen one nut and pull up the pin which holds the end bar in place, swing end-bar around same as a gate, and you have free access to change saws. An adjusting collar is fitted on the movable saw collar, so all loose motion can be taken out of the T shifter, used for adjusting same; by this device all lost motion in set-works is absolutely prevented, and lumber ripped on these machines will measure exactly the same as registered on set-works. The operator stands near the heavy iron floor-stand, and by means of one of the levers attached hereto, has full control of the movable gauge on one side, and with the other lever controls the shifting saw, thus enabling him to rip stock to different widths, or all the same width, leaving it optional with him, and allowing him to saw each board to the best advantage.

The feed works have two changes of speed. The floor-stand is well shown in the cut, and made heavy and strong, with one lever on each side, with segmental plate on top, graduated to quarters of inches. The connections are all iron, and our improved method of adjustment allows of sawing strong or scant sizes. One of the greatest troubles with self-feed gang ripping saws, heretofore, has been the difficulty in keeping the board up to the gauge as it should be, thereby saving crooked or tapering lumber. We have added a novel device to entirely overcome this difficulty. The above cut

represents a right hand machine. We build them with driving pulleys, feed works and floor-stand, either right or left hand, as desired. The feed roll is large in diameter and fluted, and runs under a heavy, solid binder roll.

Two stationary and two movable collars, and four saws, are included with each machine, thus allowing the Sawyer to keep a set of sharp saws constantly on hand, and as the process of changing saws is so simple, easily and quickly done, sharp saws will be used in preference to dull ones, thus insuring smoother and nicer work.

If desired we can arrange this machine with an extra movable saw at an additional moderate charge. When to be used as a small edger, we will spike the rolls for carrying the lumber through straight, without additional charge.

SPECIFICATIONS—No. 1 Machine saws up to 26 in. wide, 3 in. thick; diameter of saws, 14 in.; pulley, 8 in. diameter by $8\frac{1}{2}$ in. face; should run 2600 revs. per minute. No. 2 Machine saws up to 30 in. wide, 3 in. thick; diameter of saws, 14 in.; pulley, 8 in. diameter by $8\frac{1}{2}$ in. face; should run 2600 revs. per minute. No. 3 Machine saws up to 40 in. wide, 3 in. thick; diameter of saws, 14 in.; pulley, 8 in. diameter by $8\frac{1}{2}$ in. face; should run 2600 revs. per minute. Floor space required, 10 ft. by 5 ft. 3 in.

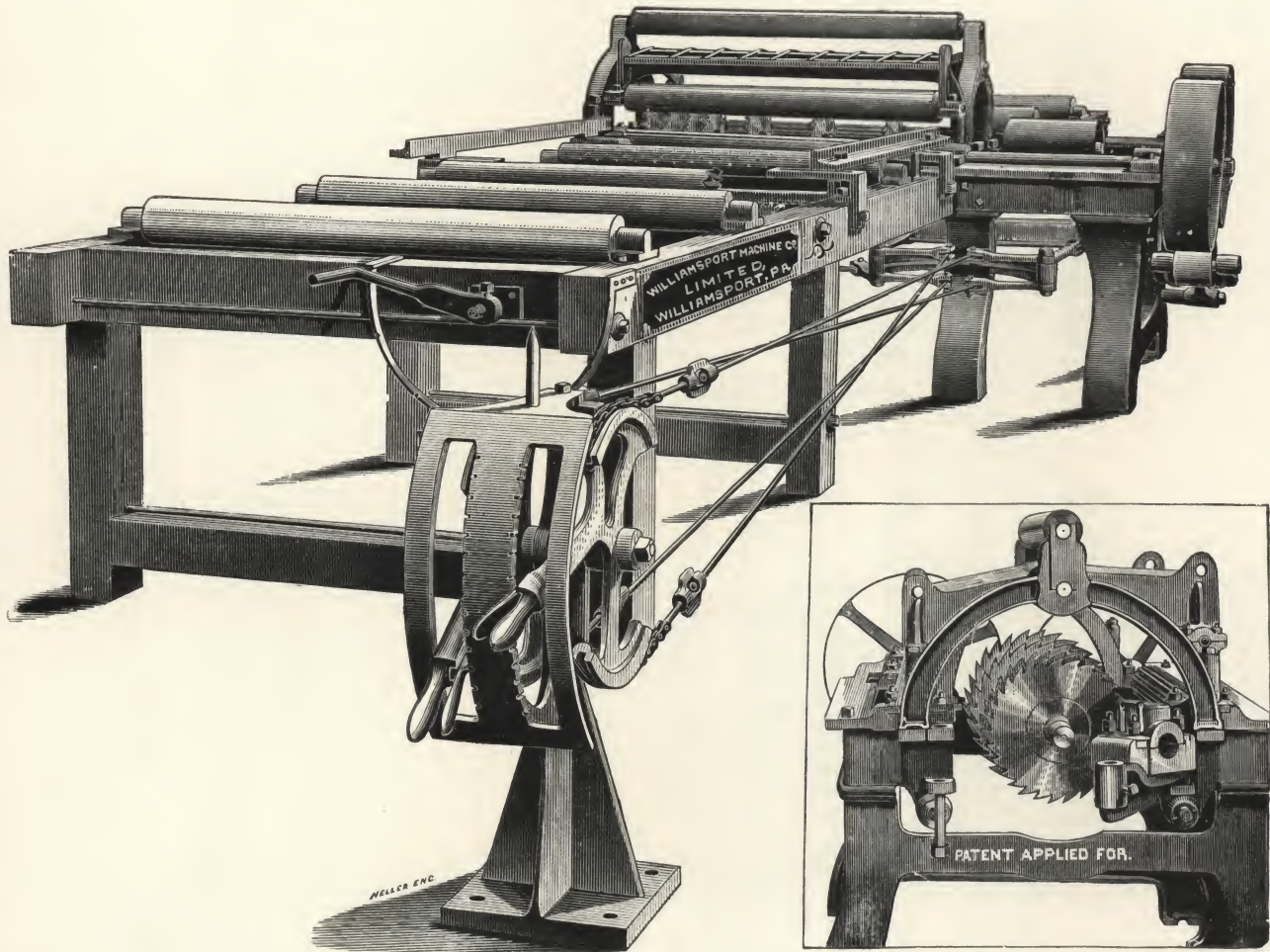
DIRECTIONS—Attach wooden frame to front and back of machine; then set movable gauge so a board will pass through clear of the uprights; then set stationary saw 9 1-16 in. from gauge; then adjust hand-screws on shifting rod till pin in set-lever drops in hole below 3, marked in segmental plate; then set movable saw 2 3/4 in. from stationary saw; then adjust rods until the pin in lever drops in hole below 2, marked on segmental plate. Be particular to have iron rolls on frame level with the rolls on the machine. It would be advisable to start machine before putting saws on, to see that the board works against the gauge as it should. Iron connecting rods are all marked, and T levers marked to correspond.

Weight.	Code Word.
1,500 lbs.	Florist.
1,600 lbs.	Flossy.
1,700 lbs.	Flounce.

Fig. 56 —No. 1 Self Feed Gang Ripping Machine
Fig. 56 A—No. 2 Self Feed Gang Ripping Machine
Fig. 56 B—No. 3 Self Feed Gang Ripping Machine

Fig. 57.

WILLIAMSPORT MACHINE CO.'S No. 2 Heavy Gang Edger.



THE above cut represents our No. 2 Heavy Gang Edger, for saw mills. It is built very heavy, in the most substantial manner and of the best materials.

The Arbor is made of STEEL, 3 INCHES DIAMETER, double key-seated, and runs in our latest improved SELF-OILING BOXES, NINE INCHES LONG.

Shifting and Holding the saws and gauge just where the operator sets them is a point that we have accomplished, and is done by no other builder. By the use of our improved device the operator can set the movable saws within one-sixteenth of an inch every time and hold them right there. The operator stands near the heavy iron floor stand, and by means of the two levers attached to the same, has full control of the two movable saws, and by means of the crank shown at the end of the table, has control of the movable gauge.

The Floor Stand is graduated on top, and is very well shown in the cut. The connections are all made of iron, and our improved method of adjustment allows sawing strong or scant sizes. By the use of these improvements the operator, without moving out of position, has full control of the Edger, while he is in proper position to feed the lumber.

One of the greatest and most important improvements is our method of removing the END BOX (patent applied for), which is well shown in the cut. The box is pivoted on a swinging cross bar, which is hinged at one end and held in position by a pin when closed. To remove the saws from the arbor it is necessary only to loosen the pin so it will drop down far enough to allow the bar to swing around out of the way, when the saws can be removed, sharp ones replaced, and the box closed up, thus keeping the arbor perfectly true and in line. There are three bearings for the arbor, one on each side of the driving pulley and one at the end.

On this machine are two driven fluted feed rolls, one in front of and one back of the saws. There is also a heavy solid binder roll over each fluted roll. We furnish the wooden approaches or tables, and seven iron rolls, four in front of the saws and three back of them. The two rolls on the wooden tables next to the iron frame are studded with steel spurs or spikes, which insures the straight sawing of narrow pieces, which is a very important point.

We also build two other sizes of Edgers, one larger (the No. 1), and one smaller (the No. 3), but all are of the same general design and appearance.

SPECIFICATIONS.

- No. 1. Extra Heavy Gang Edger. Weight, 4,000 pounds. Three Fluted Feed Rolls, driven. Broken or Double Binder Rolls, front and back, which admit of sawing two thicknesses at once. Will saw 48 in. wide and 6 in. thick. One Stationary and one Movable Gauge. One Stationary and two Movable Saws, and one Gang Collar for four saws, making 7 saws. Driving Pulley on arbor, 12 in. diameter by 12 in. face, and should run 2,500 revolutions per minute.
- No. 2. Heavy Gang Edger. Weight, 3,500 pounds. Two Fluted Feed Rolls, driven. Heavy Iron Binder Roll, front and back. Will saw 48 in. wide and 6 in. thick. One Stationary and one Movable Gauge. One Stationary and two Movable Saws. One Gang Collar for four saws, making 7 saws. Driving Pulley on arbor, 12 in. diameter by 12 in. face, and should run 2,500 revolutions per minute.
- No. 3. Gang Edger. Weight, 3,000 pounds. Two Fluted Feed Rolls, driven. Binder Roll, front and back. Will saw 36 in. wide and 5 in. thick. One Movable Gauge. One Stationary and two Movable Saws. Pulley on arbor, 10 x 10 and should run 2,500 revolutions per minute. Boxing extra, at cost.

Fig. 57 —No. 2, Heavy Gang Edger, as per specifications.....
 Fig. 57 A—No. 1, Extra Heavy Gang Edger, as per specifications.....
 Fig. 57 B—No. 3, Gang Edger, as per specifications.....

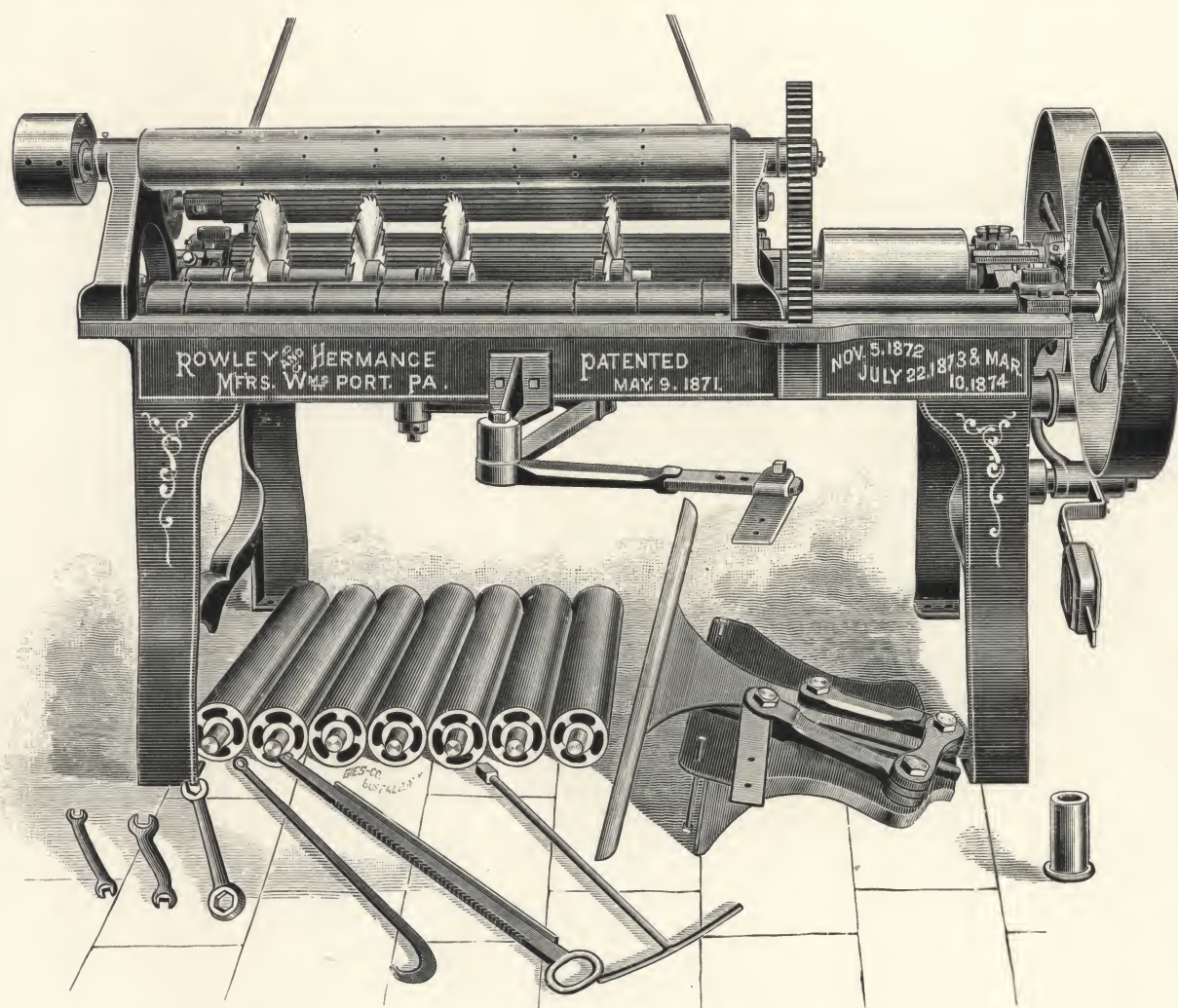
Code Word.
Flowage.
Fluency.
Fluke.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 58.

ROWLEY & HERMANCO CO.'S

Nichols' Patent No. 3 Double Edger, Improved.



VIEW SHOWING RIGHT-HAND MACHINE.

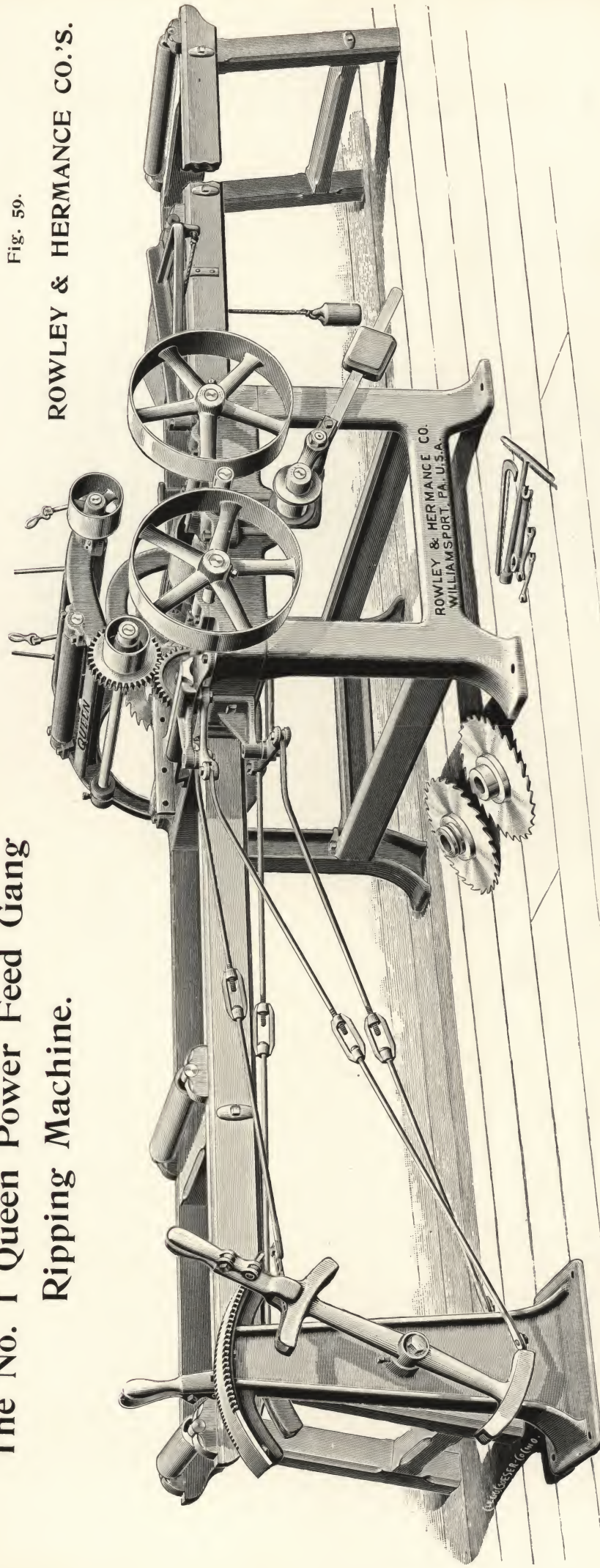
THIS machine is made from entirely new patterns, and is designed for edging boards in saw mills and sawing plank and boards, from the Muley or Circular, into joist, scantling, flooring, battens, roofing-lath, etc. It is provided with a feed roll in front, composed of small saws and collars placed alternately, and has two fluted feed rolls behind the saws, one below and one above, and a spiked roll on top (with reverse feed) which returns any board requiring to be re-edged. For edging, one saw is made stationary, and by a suitable device, convenient to the operator, the other saw is adjustable to any width. By an entirely new and simple device, dull saws can be replaced with sharp ones in less time than one minute, without affecting in the slightest degree the alignment of the arbor. Our method of changing saws is not equaled by any other edger made. For ripping, an adjustable gauge is provided with a lever running to the operator. This gauge is not used except when it is desired to rip lumber that has already been edged. The adjustable saw is also actuated by a lever, by which the saw is adjusted for any width of stuff. Both of the above levers are within easy reach of the operator when feeding long stuff to the saw. The adjustable saw is provided with our Patent Shifter Fork by which any lost motion caused by wear may be taken up. This is a very important feature where accuracy is desired. By the above means the saws and gauge are instantly set in any required position, and *rigidly held in place*. It will edge 36 inches wide by 5 inches thick; has four 16-inch saws and four saw collars. In ordering, state if you want the driving pulley on the right or left hand as you face the saw in front.

	SIZES.	Driving Pulley on Arbor.	T. and L. Pulleys.	Revs. per Minute.	Cubic Measurement.	Approximate Weight.	Average H. P. Required.	Code Word.
Fig. 58	—No. 3 Double Edger, with Wooden Frames.....	10 x 10	.....	2,200	142	2,300	6 to 10	Flunkey.
Fig. 58 A	—No. 3 Double Edger, without Wooden Frames.....	10 x 10	.....	2,200	142	1,700	6 to 10	Flurry.
Fig. 58 B	—Counter-shaft, if wanted, extra, with Tight and Loose Pulleys		12 x 10	917	6	350	.....	Fluster.

**The No. 1 Queen Power Feed Gang
Ripping Machine.**

Fig. 59.

ROWLEY & HERMAN CO.'S.



VIEW OF RIGHT HAND MACHINE.

The Most Durable, Convenient and Simple Machine of its Kind on the Market. Using from One to Four Saws.

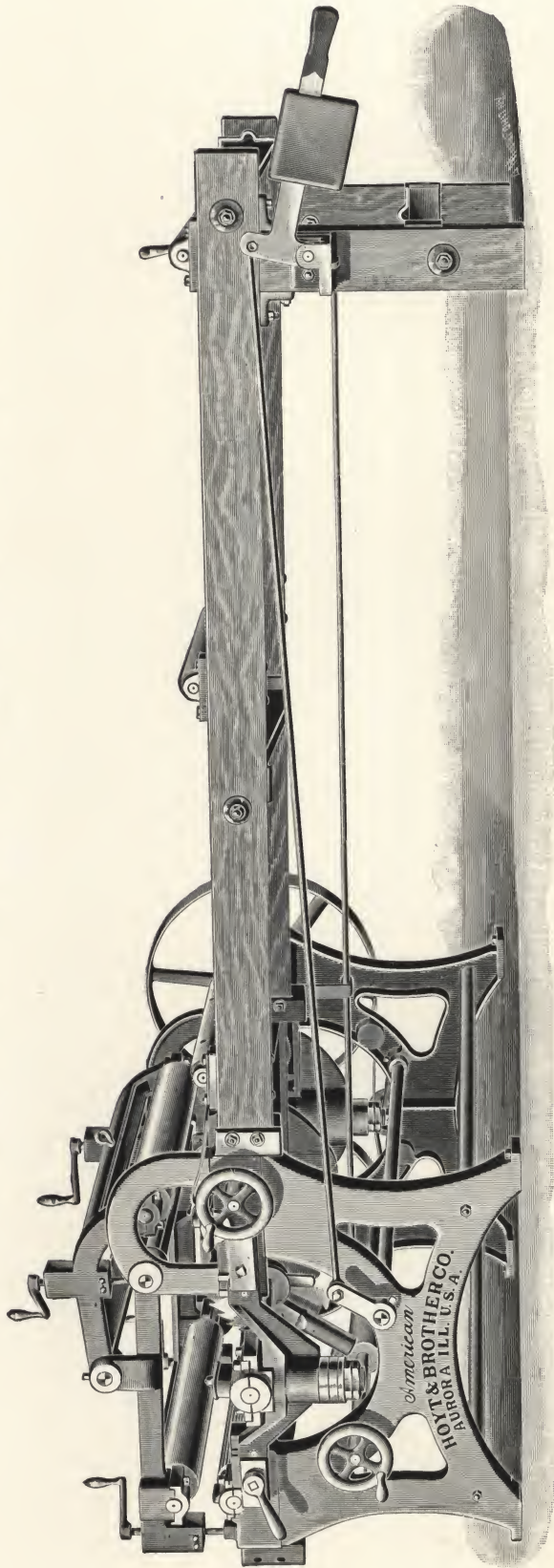
IT HAS TWO RATES OF FEED, and will rip stock boards at the rate of from 80,000 to 100,000 feet per day of ten (10) hours. All rolls are driven, making a strong and positive feed. The arbor is very heavy, made of the best steel and double keyseated. It has three long bearings, running in our improved self-oiling boxes. It is easy to operate, quickly adjusted, and not liable to get out of order. The adjustable saw and movable gauge are under perfect control of the operator. By means of our patent shifter fork (which is made in two parts) all lost motion can be taken out of the set works, thus insuring ripping to exact widths. The rods that adjust the saw and gauge have turn buckles for taking up wear and lost motion. Our new set works (an improvement on those shown in the cut) are superior to anything of the kind in use. They allow the gauges to be set at any fractional part of an inch instead of stated fractions, which is the case where gauge bars with notches or holes are used. With our new set works, sizes can be ripped "scant" or "strong," and the gauges held perfectly rigid at any desired point. Our device for removing the saws is fitted accurately to the end of the frame and is as tight and solid as the frame itself; by simply loosening one bolt to which is attached our swivel wrench, the end is allowed to swing open, when the saws can be removed and replaced by sharp ones within two minutes. The end box is then swung into position without effecting the alignment of the arbor. We attach a swinging weighted gauge to the rear of the machine for supporting the lumber at a distance from the saw to prevent the board from running away from the saw, thus insuring straight edge lumber, and we guarantee this machine to saw all lumber uniform in width from end to end. It will saw 26 inches wide and 4 inches thick. We furnish with this machine four collars, two adjustable and two stationary, 14-inch saws and the wooden tables.

Fig. 59 —No. 1 Queen Power Feed Gang Ripping Machine.....	Driving Pulley on Arbor. 8 x 8	T. and L. Pulleys. 12 x 8	Revs. per Minute. 2,500 834	Cubic Measurement. 125 6	H. P. Required. 6 to 8	Code Word. Fluted. Fluxion.
Fig. 59 A—Counter-shaft, extra, with Tight and Loose Pulleys.....	.....	.....	.....	.....	.....	.....

Fig. 60.

HOYT & BROTHER CO.'S

New 30-inch Self Feed Gang Ripping Machine.



WE illustrate herewith our New Improved Gang Ripping Machine. The rear table is not shown, but is similar to the front. Both are provided with turned Iron Carrier Rolls. The rear table has an adjustable guide spring, which can be given any tension desired, instantaneously, by lever (A) on the right of the operator, for the purpose of keeping the lumber in perfect line.

There are three power rolls and one dead roll, all $4\frac{1}{2}$ inches in diameter, giving a powerful feed.

The Adjustable Pressure Bar in front of the saws supports the lumber until the cut is completed.

The Arbor is made of the best tool steel and is $2\frac{3}{8}$ inches in diameter, and runs in adjustable boxes.

The Adjustable Arbor is a new and important feature in Gang Ripping Machines. The saws being raised to accommodate the thickness of the material, the cut being made above the center of the saw, the lower corners are not broken, which is an important feature in ripping stock for moulding casings. By the use of our adjustable arbor we are enabled to use thinner saws, and are not as liable to burn.

The crank B, opposite the guide C, moves the saws. Either can be moved to any fraction of an inch, and will keep their positions.

The End Bridge Tree can be removed and saws changed without the use of any tool whatever. An attachment can be furnished to move the saws from the position of the operator, if desired, but for yellow pine it is much preferable as it is.

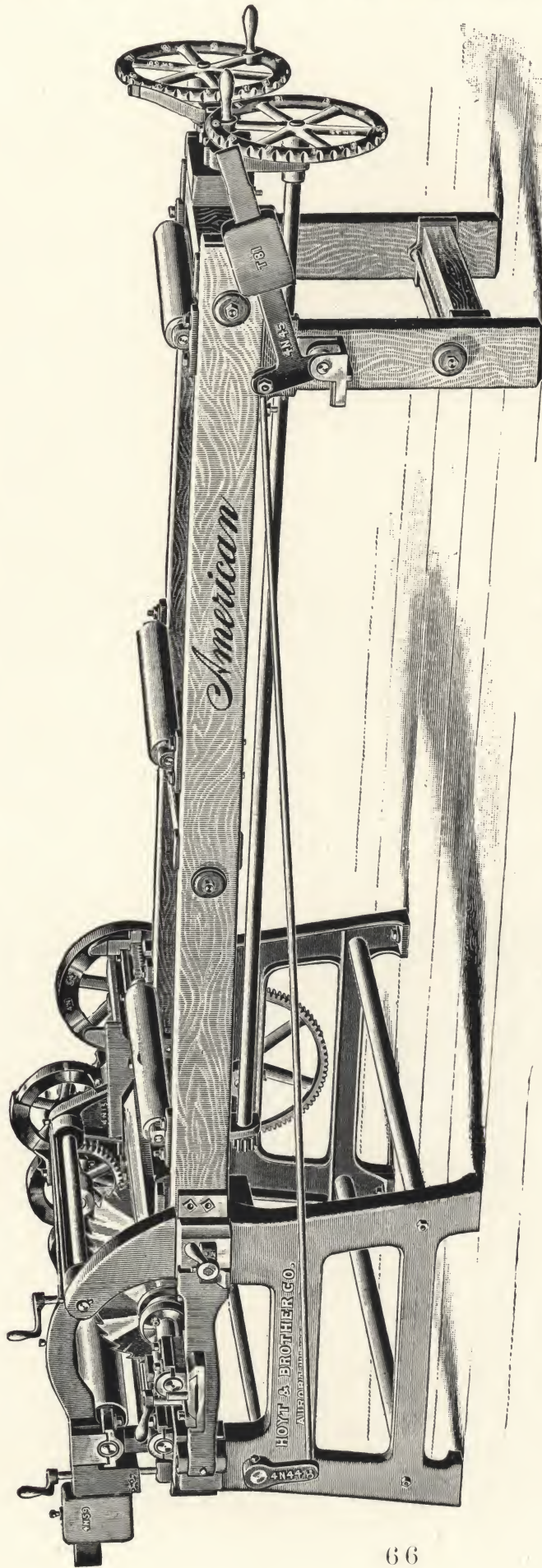
The machine carries three 15-inch saws, 12 gauge. Three extra saws and collars are furnished with each machine.

Pulley on arbor, 10 in. diameter, for 10 in. belt. Speed, **2,000 revolutions per minute.** It will feed 200 feet per minute.

Fig. 60—30-inch Gang Ripping Machine, Complete	Weight.	Code Word.
	3,300 lbs.	Foam.

Fig. 61.

HOYT & BROTHER CO.'S 24-inch Self Feed Gang Ripping Saw.



WE illustrate above our New Gang Ripping Saw. The rear table is not shown, but is similar to the front one. Both are provided with turned iron carrier rolls, the rear one having an adjustable guide spring, which keeps the lumber perfectly in line.

The Arbor is of tool steel, large in diameter, and has three bearings. The outer or swinging bearing is perfect. It cannot be put to place without assuming the exact original position, and is probably the most perfect bearing made. All handles necessary for loosening this bearing and removing the saws are attached to the machine, just where you need them.

The Feed is powerful and rapid, being given by one belt only (driven by a good sized pulley) and train of gear, which drive both upper and lower rolls. A weighted belt tightener controls the feed, which may be started or stopped instantly. In either case, the tightener lever remaining in its required position. **The Guide** and movable saw are each adjusted by means of a self-locking indexed hand-wheel.

Four Saws and Collars (two tight and two movable) are furnished with each machine, so that one pair may be put in order while the others are in use. When required, we furnish two extra loose collars and saws, which allows the use of three saws at a time. This increases the capacity greatly, especially when ripping flooring strips. Before starting the saw, place the guide to the extreme right, with its hand wheel indicating "8." Place the tight saw eight inches from guide. Place loose saw two inches from tight saw and its hand wheel indicating "2."

Arbor Pulley 10 inches in diameter, for 8-inch belt, and should run from **2,200 to 2,500 revolutions per minute.**
Capacity, 24 inches by 4 inches. Belting required, 6 feet of 3-inch. Weight, 2,400 pounds.

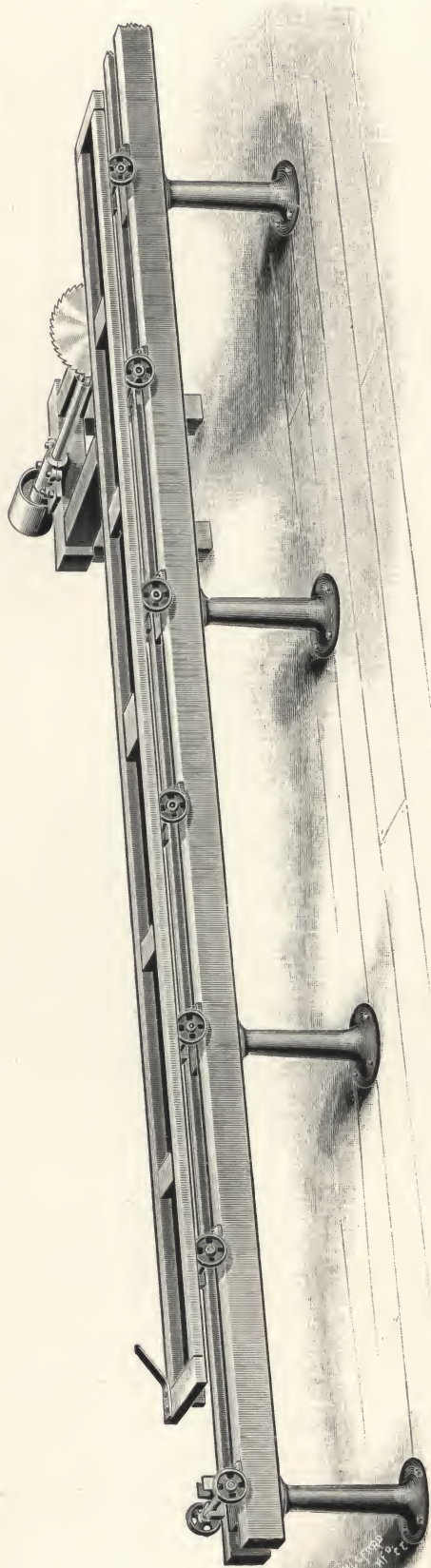
Code Word.
Fodder.

Fig. 61—24 inch Self Feed Gang Ripping Machine, Complete.

Fig. 62.

C. B. ROGERS & CO.'S

Carriage Edging Saw.



THIS machine is for jointing the edges or splitting plank and boards, and is provided with back table and splitting gauge if desired.

The Frame is made of wood, on iron posts, making it very firm and substantial; on this frame are placed at suitable distances apart, flat wheels of good size, on which the carriage is easily moved and guided by a wood strip in iron grooves.

The Carriage is framed in panels, making it light and strong; usual length is 16 feet. For standard machine any length desired will be furnished at special price.

Machine is fitted with one of our regular No. 2 Saw Arbors, suitable for 16-inch saw; size of hole, 1 inch.

The Pulley on Arbor is 4½ inches diameter, 5 inches face, and should make 2,000 revolutions per minute.

Counter-shaft furnished as extra if desired. **Weight** of 16-foot machine is 850 pounds.

Fig. 62—Carriage Edging Saw, Complete..... Code Word. **Foiler.**

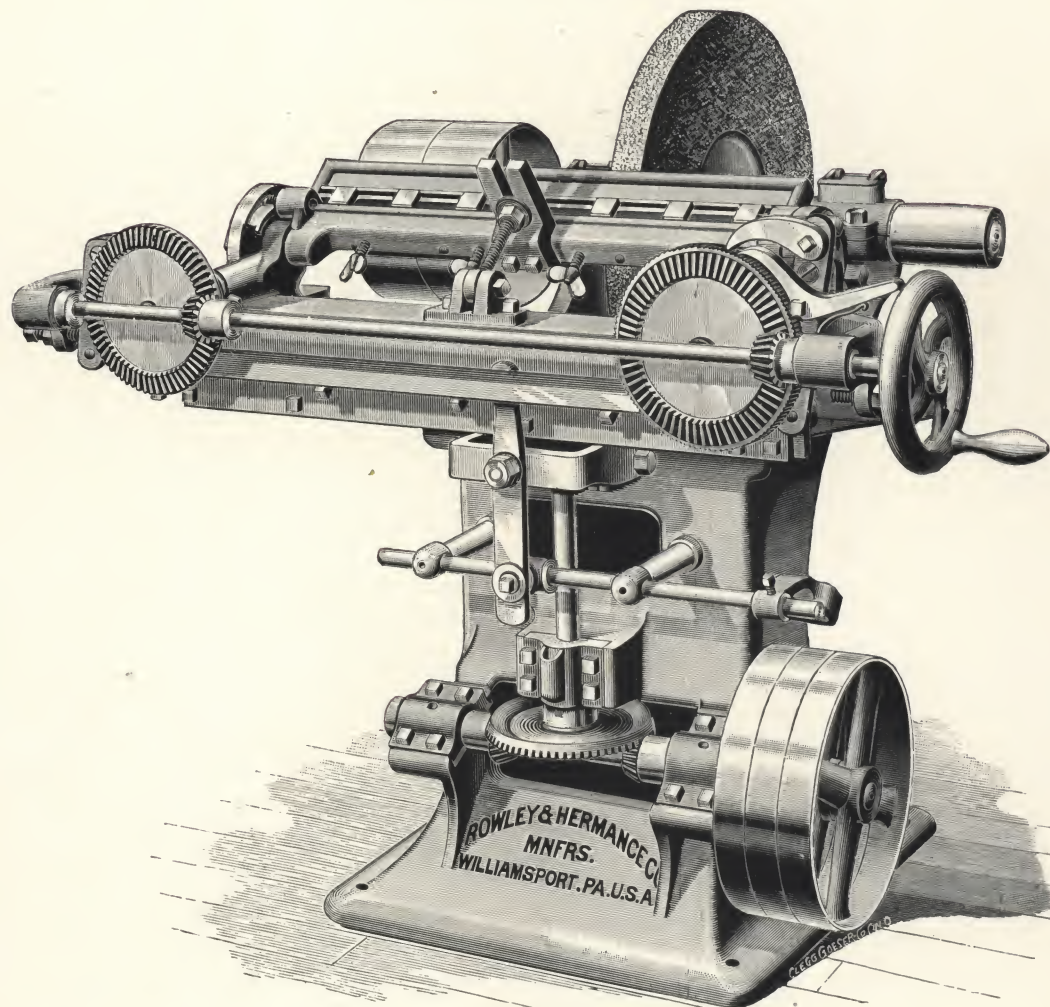
AMERICAN WOOD-WORKING MACHINE CO.

Fig. 63.

ROWLEY & HERMANCE CO.'S

Perfection Automatic Knife Grinder.

WITH POWER CROSS FEED.



THIS illustration shows our New Automatic Knife Grinder with Power Cross Feed, designed for rapid and accurate grinding of planing knives of all kinds, long or short.

The Base and Frame are cast in one piece, making it very rigid and free from vibration while in operation.

The Carriage has an automatic traverse movement forward and backward across the face of the wheel, and an automatic cross feed toward the wheel; and is provided with adjustable stops on the face of the carriage for regulating the traverse. It can be instantly stopped without stopping the wheel, by simply throwing the reverse lever out of position, and is adjustable to and from the wheel for the wearing away of the wheel.

The Automatic Cross Feed is adjustable for light or heavy cut, and is provided with a stop for regulating the cut to be taken, and when set it will stop feeding and grinding when the cut is finished. Thus the operator can attend to other work while the knife is being ground.

The Knife can be set with the edge up or down, or to grind on the bottom or top of the wheel. The knife can be quickly set at any angle or bevel desired.

The 50-inch machine has standards under each end of the bed to insure steadiness.

The Emery Wheel is 22 inches diameter by $1\frac{1}{2}$ inch face, with iron centre 10 inches in diameter, which greatly reduces the cost of future wheels. The machine is easy to operate and keep in order, and does perfect work.

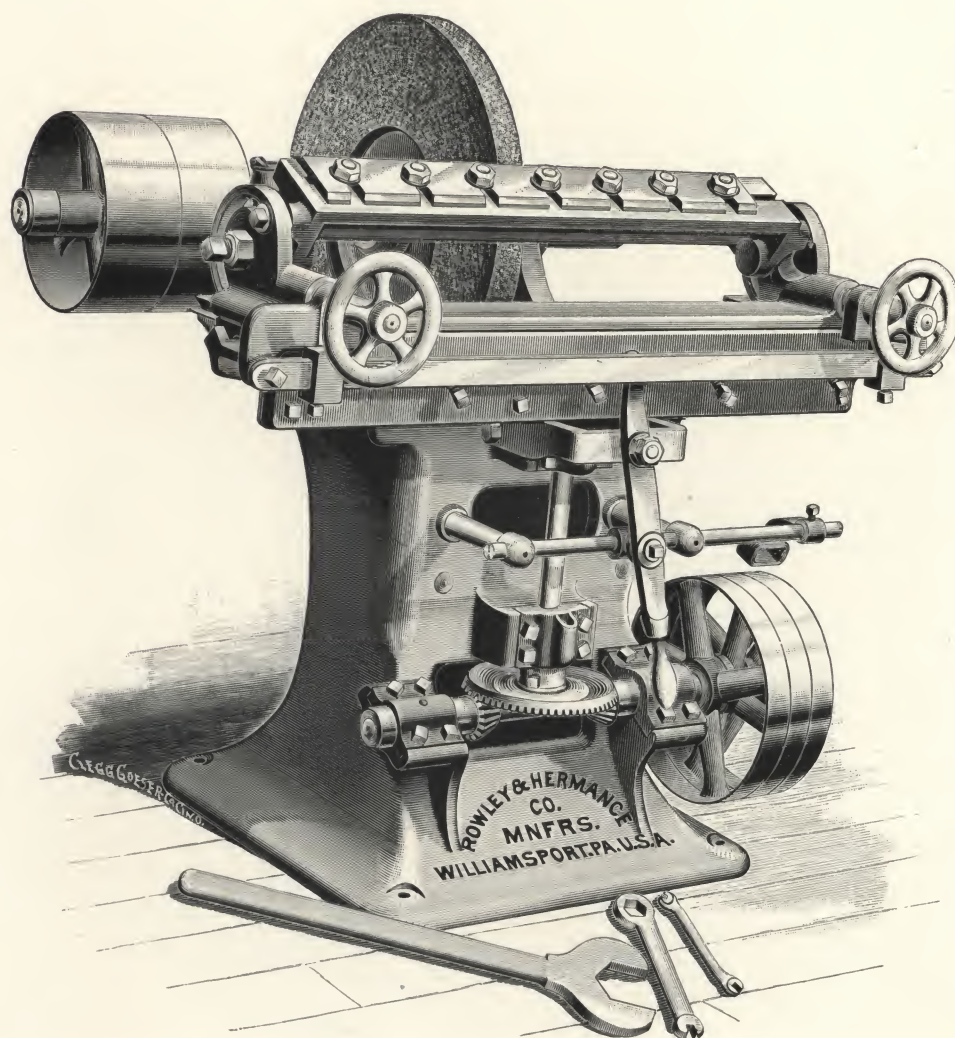
To Grind Knives	T. and L. Pulleys.	Revs. per Minute.	Approximate Weight.	Cubic Measurements.	Average H. P. Required.	Code Word.
Fig. 63 —Up to 30 inches.....	10 x 4	720	880	74	1	Foist.
Fig. 63 A—Up to 40 inches.....	10 x 4	720	1,000	76	1	Folding.
Fig. 63 B—Up to 50 inches.....	10 x 4	720	1,150	79	1	Foliage.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 64.

ROWLEY & HERMANCE CO.'S Automatic Knife Grinder.

WITH HAND CROSS FEED.



THIS machine is designed to meet the demand of a first-class Automatic Knife Grinder without the Power Cross Feed, and to do the same class of work.

The Frame is heavy and cast in one piece, making it rigid and free from vibration.

The Carriage has an automatic traverse movement across the face of the wheel, and is provided with adjustable stops for regulating the length of cut, and can be instantly stopped at any desired point.

The machine is constructed in the same manner and has all the improvements contained in the "Perfection," except the Power Cross Feed.

Built in three sizes. We furnish each machine with one emery wheel, 22 inches diameter by 1½ inch face, and all necessary wrenches.

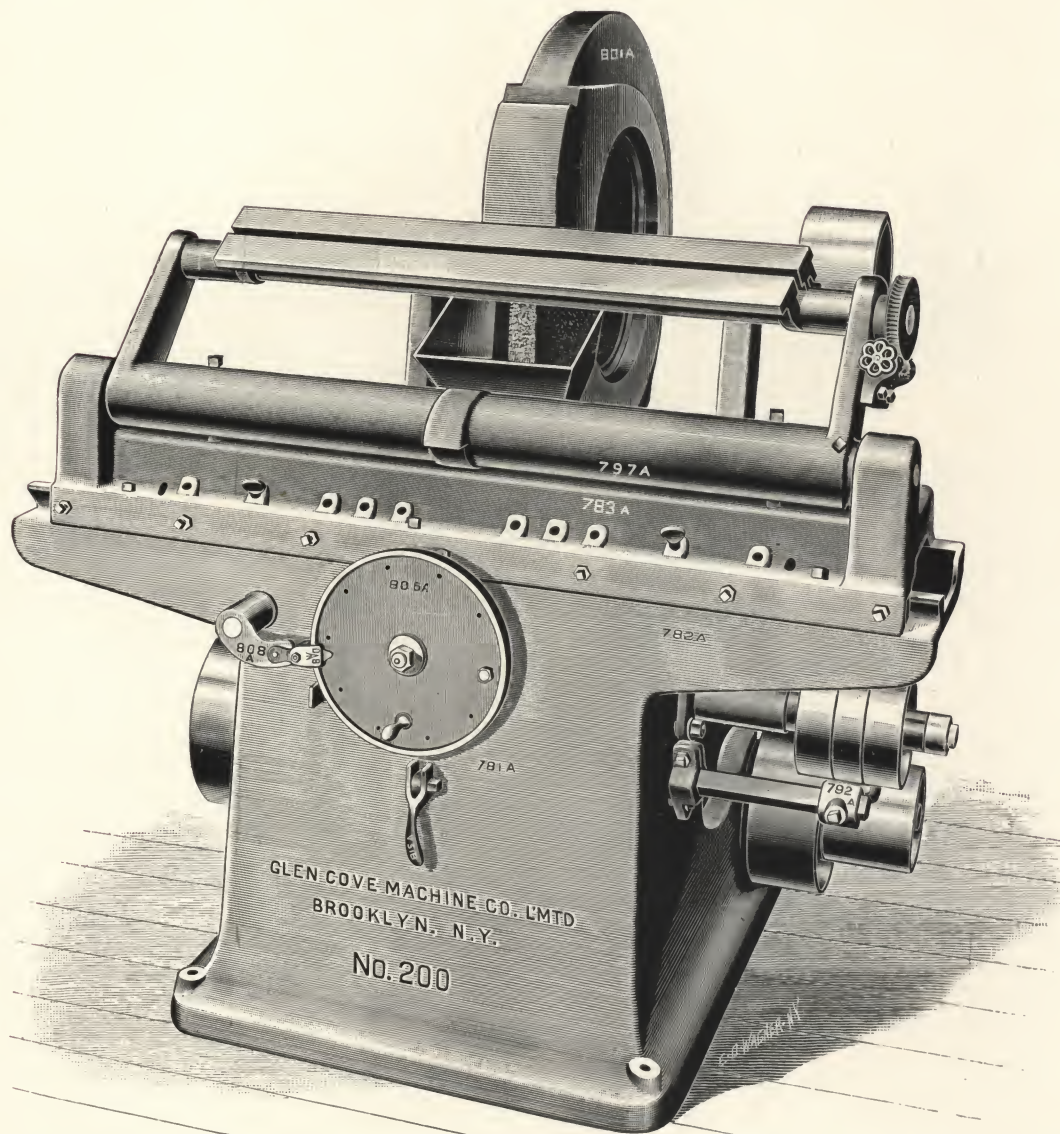
To Grind Knives	T. and L. Pulleys.	Revs. per Minute.	Approximate Weight.	Cubic Measure- ments.	Average H. P. Required.	Code Word.
Fig. 64 —Up to 26 inches	10 x 4	720	800	74	1	Follower.
Fig. 64 A—Up to 30 inches	10 x 4	720	950	76	1	Folly.
Fig. 64 B—Up to 36 inches	10 x 4	720	1,100	79	1	Foment.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 65.

GLEN COVE MACHINE CO.'S

No. 200, Automatic Self Feed Knife Grinder.



THIS machine has been designed to grind any kind of knife or bar that will lie upon a plane surface.

The automatic features of this machine are:

First.—A transverse reciprocating movement of the cutter bar and its supporting frame, regulated in extent, from 2 inches to 30 inches, by means of two pins set in holes in frame as shown.

Second.—A movement of the grinding wheel towards the work that can be regulated to grind from 1-3000 to 1-200 of an inch to each back and forth movement of the cutter bar frame.

To the outer end of the screw feed-shaft is secured, at front of machine, a disk feed wheel actuated by hand or power, the latter applied by means of the gripping device shown as engaging the rim of the wheel, providing the rates of feed above mentioned.

Third.—Means for causing the machine to cease grinding at any point for which it may be set. The disk feed-wheel has in its web ten small holes. A pin set in any hole forward of the feed grip will be gradually brought around until it engages the grip, when the forward feed of the grinding wheel will be at once arrested. Thus there is no danger that cutters will be overground through inadvertance or inattention of the operator. Each space between the holes allows a forward feed to grinder of 1-50 of an inch.

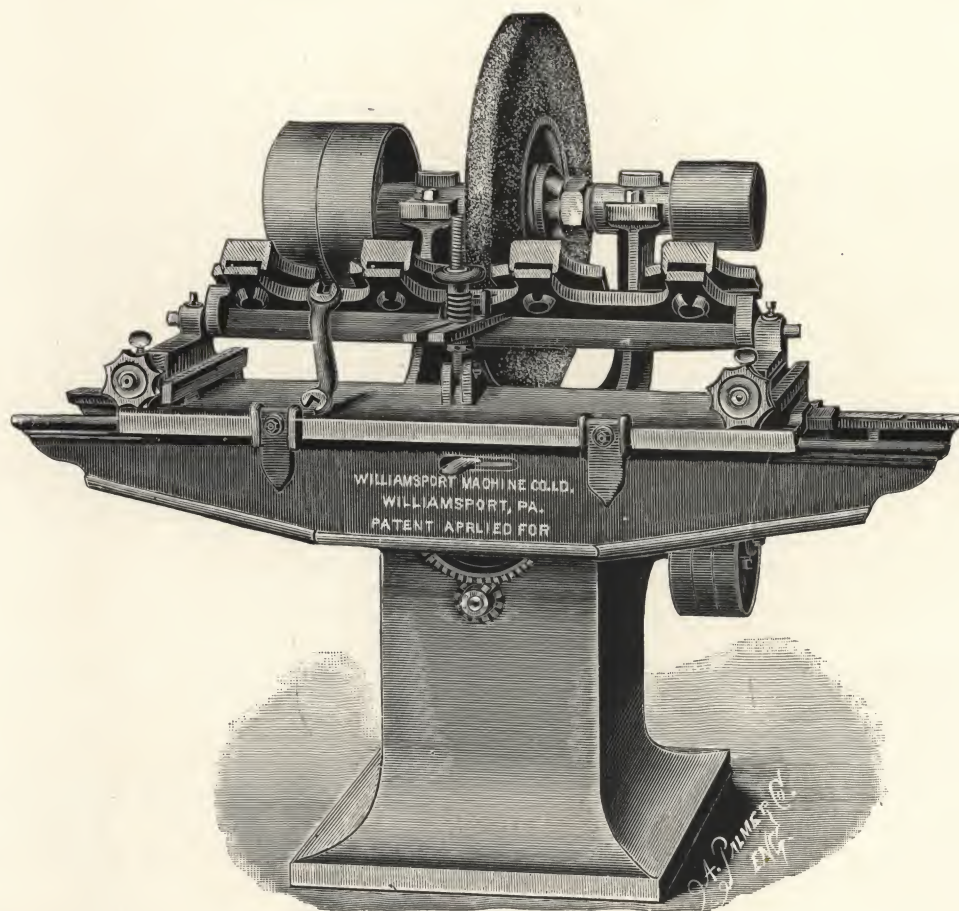
By raising the curved lever below the disk feed-wheel the reciprocating movement of the cutter bar may be instantly stopped. In adjusting the feed belts put the straight one nearest the machine and the crossed one outside.

	To Grind Knives	T. and L. Pulleys.	Revs. per Minute.	Belting Required.	Weight.	Code Word.
Fig. 65	—Up to 30 inches.....	12 x 3	300	{ 7 ft. 5½ in. of 4 in. single, } 8 ft. 8½ in. of 1 in. double. }	1,300	Fondler.
Fig. 65 A	—Up to 42 inches.....	12 x 3	300		1,300	Foolery.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 66.

WILLIAMSPORT MACHINE CO.'S New Automatic Knife Grinder.



K NOWING the necessity of having a good Automatic Knife Grinder in every mill using planers has induced us to build a machine for doing this kind of work, which can be sold at a price so every mill using planers can afford to have one of them. Most of these machines have been so high in price that mill men were compelled to grind their knives on grindstones or small emery grinders. The above cut represents our new Automatic Knife Grinder. This machine should be in every planing mill, furniture, sash and door factory. It recommends itself at once to every practical mill man, being both simple and durable. Its work is done quicker and better than can be done by hand. After the work is placed on the machine and adjustments regulated, it requires little or no attention, thus saving the time of one man.

The Holding Bar, to which the knife is bolted, is so constructed that the heat made in grinding the knife will not spring it; thus the knife is ground perfectly true and not hollow in the centre.

The Wheel used on this machine is made special, so that you can use water on it if so desired, or run it dry. They are warranted not to heat or draw temper on knife.

The Emery Wheel used is 22 inches in diameter by 1 1/2-inch face.

For parties wanting to use water on wheel, we will furnish a hood and tank for the machine at slight extra cost.

To Grind Knives	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 66 —Up to 32 inches.....	10 x 3	350	700	Foolish.
Fig. 66 A—Up to 36 inches.....	10 x 3	350	700	Footing.
Fig. 66 B—Up to 50 inches.....	10 x 3	350	700	Footpad.

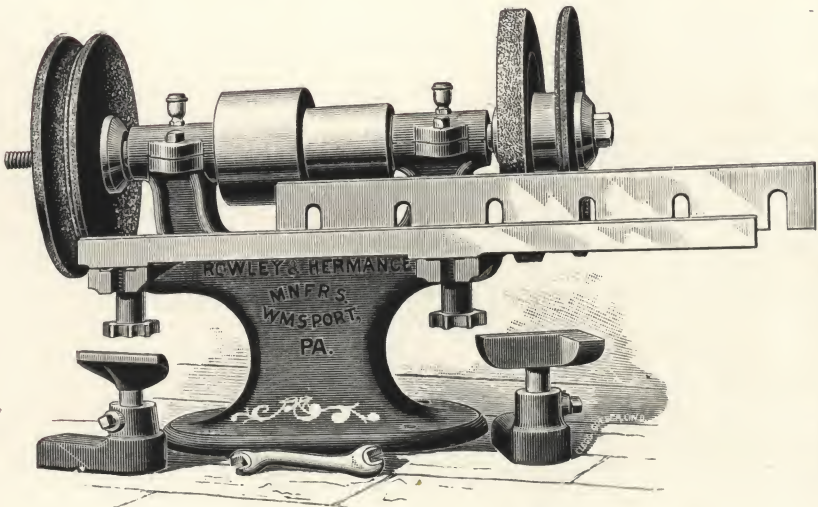
AMERICAN WOOD-WORKING MACHINE CO.

Fig. 67.

ROWLEY & HERMANCO CO.'S

No. 1, Double End Emery Grinder.

Arranged to Carry Five Wheels, with Knife Grinding Attachment.



THE accompanying cut shows our Double End Emery Grinder, a heavy, substantial machine of entirely new design.

The Arbor, which is made of steel, is mounted in long boxes to prevent rapid wear, and fitted with a cone pulley, which gives two changes of speed; one end is so arranged as to carry four 12-inch wheels of various thicknesses, and the other end one 12-inch wheel.

This Machine is heavy and solid, being built in the very best manner. No planing mill or wood cutting establishment can afford to be without one.

Counter-shaft furnished if desired.

Fig. 68.

ROWLEY & HERMANCO CO.'S

No. 2, Double Wheel Emery Grinding Machine.

A CONVENIENT and indispensable machine for every mill. Will operate wheels to 12 inches diameter; has 1 inch steel arbor, fitted for wheels with 7/8 inch holes.

It is well made and thoroughly balanced.

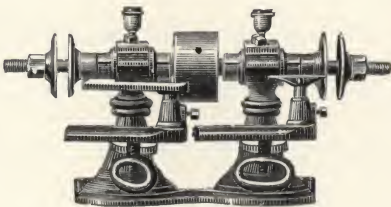
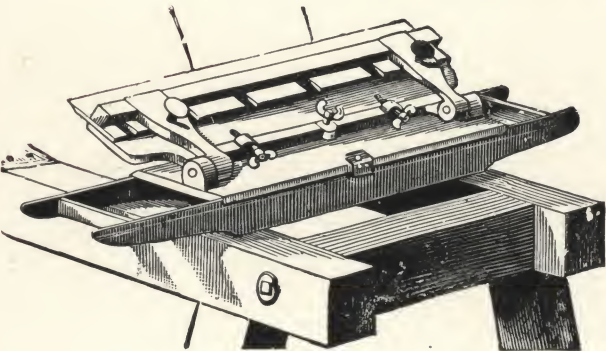


Fig. 69.

ROWLEY & HERMANCO CO.'S

Common Knife Grinding Machine.



CAN be attached to any grindstone frame. The knife to be ground is set between the jaws of the clamp and fastened by hand wheels.

Any Desired Bevel can be obtained by the adjusting screw.

The Carriage slides across the face of the stone, and grinds the knife perfectly straight.

All screws are made of brass to avoid rust.

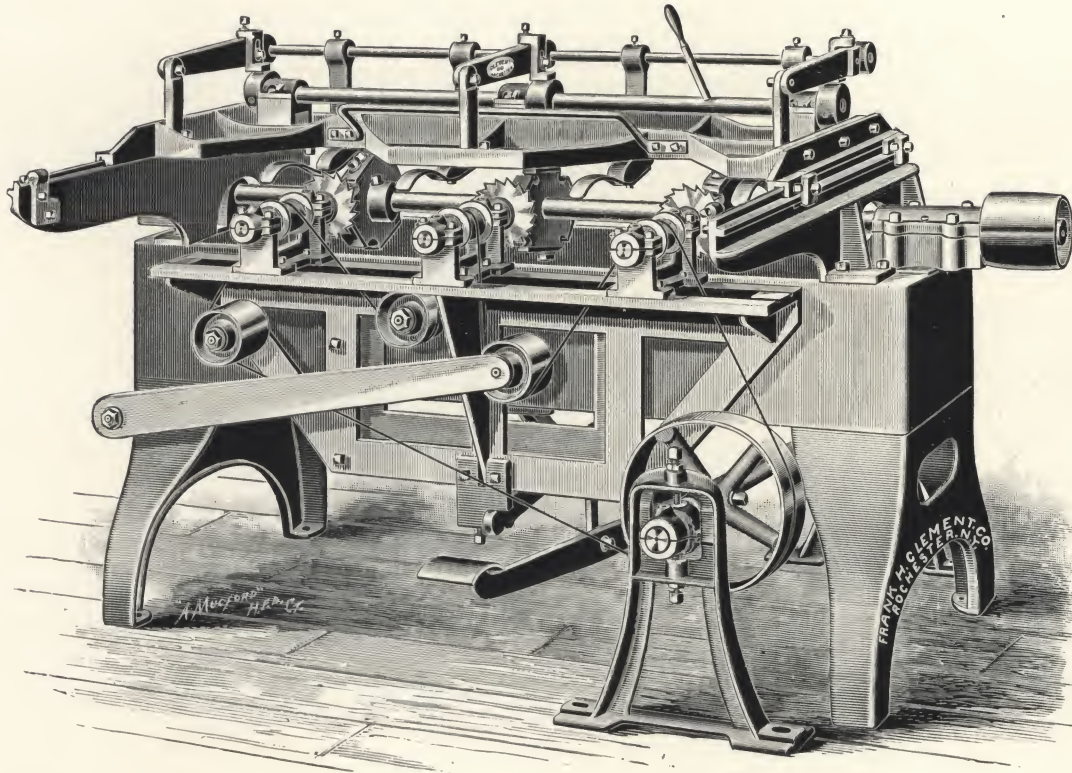
	T. and L. Pulleys.	Revs. per Minute.	Size of Driving Pulley on Arbor.	Weight.	Cubic Measurement.	Average H. P.	Code Word.
Fig. 67 —No. 1, Double End, with Counter	8 x 4	750	.....	242	15.	1	Foppery.
Fig. 67 A—No. 1, Double End, without Counter.....	.....	.....	4 and 6	135	12	1	Forage.
Fig. 68 —No. 2, Double Wheel, with Counter.....	8 x 3	400	.....	120	5	1	Forbear.
Fig. 68 A—No. 2, Double Wheel, without Counter.....	.....	.....	4	80	2	1	Forcedly.
Fig. 69 —Common Knife Grinding Machine.....	.....	.....	.....	.....	.....	.....	Forceps.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 70.

F. H. CLEMENT CO.'S

Knuckle Joint Machine or Hinge Gainer.



THIS is a labor saving machine for letting in butts on all kinds of fall leaf tables. There are three dado heads for cutting the gains, and three routing saws for the knuckles, each on its own arbor, which are adjustable to any usual length of leaf or top. The stock is clamped to the under side of a true iron table, thus gauging from the top and making the gains all of the same depth when the machine is properly set.

The Ways on which the table moves are provided with adjusting gibs, and the table is also gibbed under to prevent lifting.

Adjustable Stops limit the length of the gains and locate the knuckle at the exact point required for the rule joint.

The Clamps work with eccentrics and are adjustable to different thicknesses of stock.

The Routing Saws have a simultaneous vertical movement on a supporting frame by means of a foot lever, and are driven from a sub-counter-shaft which in turn is driven from the main counter located overhead.

The Gaining Heads may be adjusted to any point on the main arbor, and the latter is adjustable vertically for different depths of cut. The ordinary length takes in 48 inch stock, or less, and any usual width.

All Parts are nicely fitted and details are extra heavy and carefully designed. No table factory can afford to be without this machine, as it does at one handling what has heretofore required three, and generally six movements. Our self-oiling "jump flange" loose pulley is furnished.

Two Counter-Shafts are furnished, and the speed of the main one should be about 600.

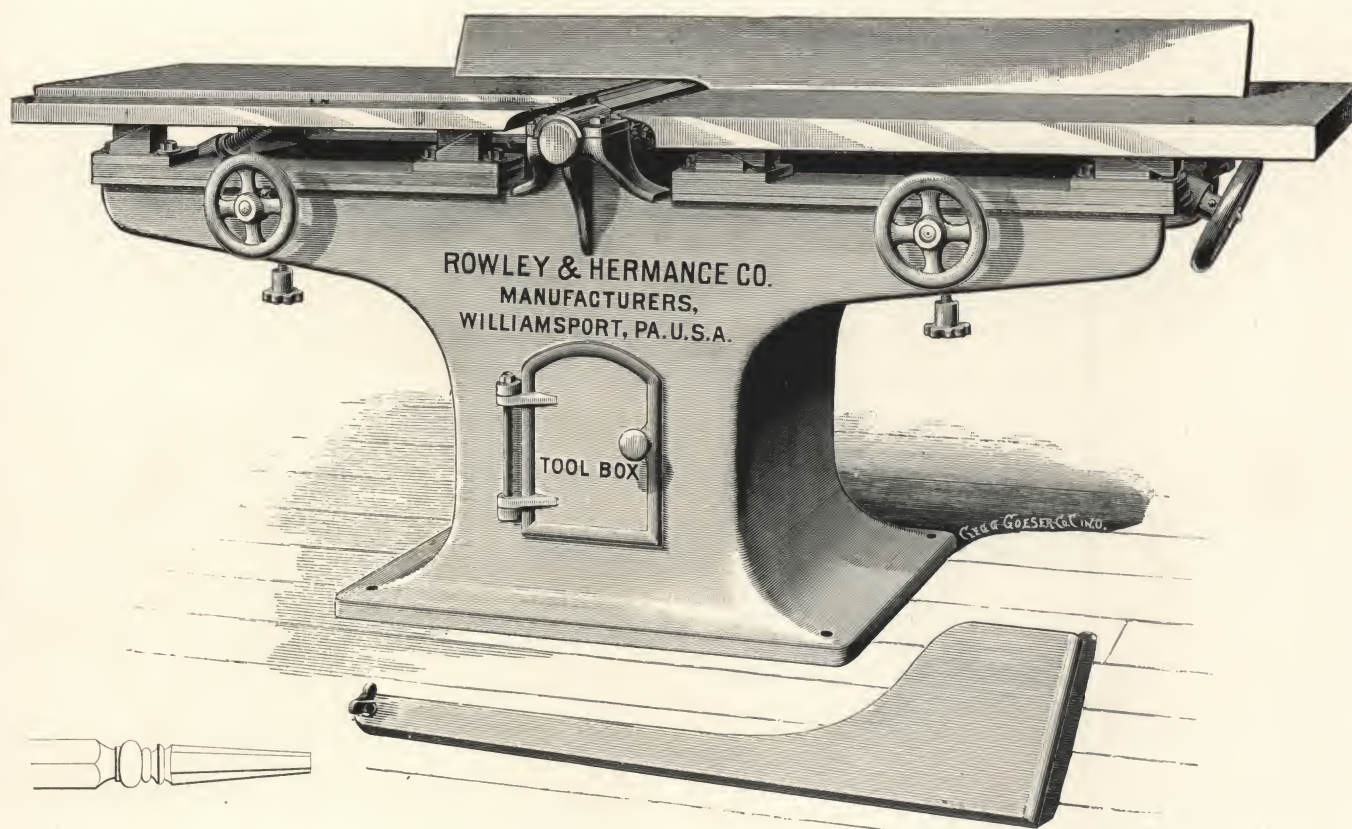
	T. and L. Pulleys	Revs. per Minute.	Weight.	Code Word.
Fig. 70—Machine and two Counter-Shafts, complete.....	10 x 6¼	600	1,700	Forded.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 71.

ROWLEY & HERMANCE CO.'S

New Pattern Improved Hand Jointer or Buzz Planer.



THIS machine is capable of a great variety of work, such as planing out of wind, cornering, beveling, rabbeting, chamfering, squaring up, making glue joints, etc., making it indispensable in sash and door, agricultural implement, furniture, car works, pattern shops, and other wood-working establishments.

The Frame is cast in one piece, making it very strong and substantial.

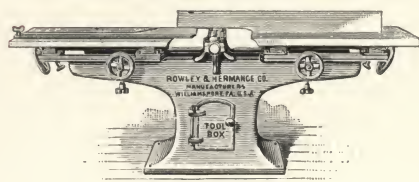
The Tables are 7 feet long. Each table has an independent vertical adjustment operated by the hand wheels shown at each end of the machine, also an independent lateral adjustment of 7 inches each, to and from the path of the cutters, operated by the hand wheels shown on the front or working side of the machine. This unusual space allows free access to the cylinder and will be appreciated by every mechanic.

Our Improved Dovetailed Incline Adjustment for raising and lowering the tables makes it almost impossible to get the tables out of position, and if once out, they can be re-adjusted in two minutes. This is a great improvement over any other machine of this kind on the market.

The Cylinder is made of solid forged steel, small in diameter so it can be run at a high speed, which is very essential for doing smooth work on brash or cross-grained lumber. It is provided with bolts on two sides for carrying straight knives, and slotted on the other two sides for carrying rabbeting and other odd knives.

It is provided with an adjustable gauge, which can be set square or at any desired bevel, also a wooden safety guard to prevent accidents to the fingers of the operators.

We furnish with each machine one counter-shaft, one set (2) straight knives for cylinder, and necessary wrenches.



DIRECTIONS:—Never screw or fasten the machine to the floor. The tables should be set level to do perfect work. Level the planer by putting thin wedges under the base of the machine. The belt on the cylinder should be endless, light and of even thickness, without any hook, rivets or lacers. The laps should be cemented, and it will last longer, cylinder will run better and do smoother work. Belts on the 8, 12 and 16-inch machines should be 3½ inches wide; on the 24 and 30-inch machines 4 inches wide.

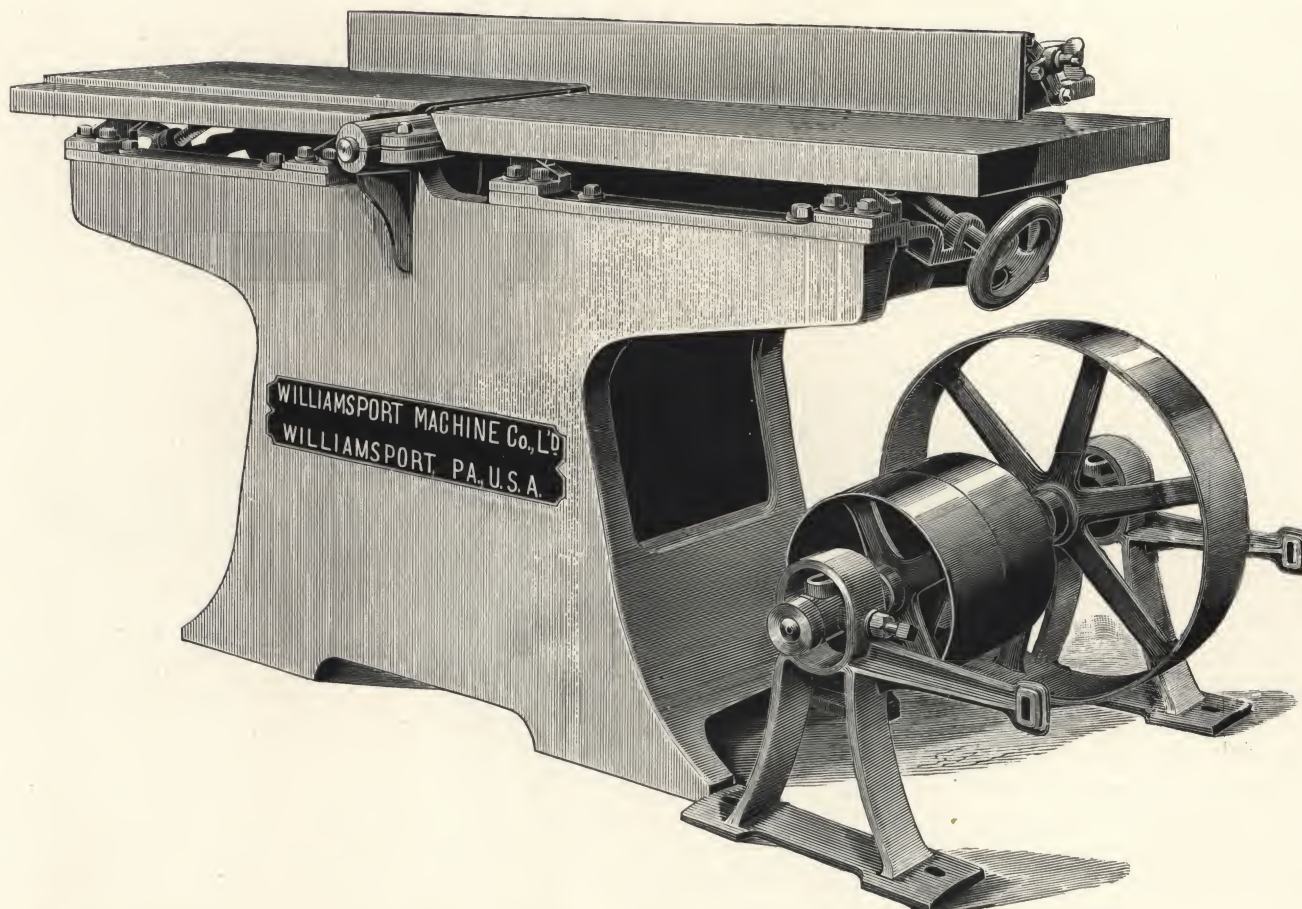
	T. and L. Pulleys.	Revs. per Minute.	Cubic Measure.	Weight.	Average H. P. Required.	Code Word.
Fig. 71 —To work 8 inches wide.....	8 x 4	780	35	1,050	1 to 2	Forebode.
Fig. 71 A—To work 12 inches wide.....	8 x 4	780	42	1,300	1 to 2	Forecast.
Fig. 71 B—To work 16 inches wide.....	8 x 4	780	49	1,550	2 to 3	Forego.
Fig. 71 C—To work 24 inches wide.....	8 x 4½	780	63	1,900	2 to 4	Forehead.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 72.

WILLIAMSPORT MACHINE CO.'S

Hand Planer and Jointer, with Complete Adjustable Gauge.



THIS Hand Planer and Jointer is a newly designed machine, and the success it is meeting with is a sure indication of its merits over all Planers of a similar kind in the market.

The Hand Planer is now used for a large variety of work, and has become one of the most necessary tools in wood-working shops, for labor saving, and accurate work in planing out of wind, squaring up, beveling, rabbeting, making glue joints, etc.

The Tables are very long, being over six feet in length, which is a very important point for smooth planing and making straight joints; each table can be adjusted vertically or laterally, working on inclines to or from the cylinder, and the throat is always small. Both the tables can be moved to give opening enough to sharpen or set the knives; this is done by simply loosening the hand wheel at side of machine, which will allow the table to move back without changing the height of same. At the will of operator the depth of cut can be changed from one-sixteenth to one-half inch without stopping the machine.

The Frame is cast in one piece, making it very solid and compact; is extra well braced inside, giving a rigid bearing for boxes, which are cast solid on the frame of machine, allowing the cylinder to run at a high rate of speed without jar or tremble.

The Cylinder is made from the best refined cast-steel, slotted on two sides, the long knives being on the plain sides, so that any kind of knives such as are used for grooving, reeding moulding, etc., can be used on the slotted side.

Each machine is thoroughly tested before leaving our works, and guaranteed to give satisfaction. All sizes are made for rabbeting.

A WORD TO WOOD-WORKERS.—If you want a Planer that will save you hard labor in cabinet, furniture, chair, coffin and frame factories, you cannot afford to be without one of our improved Hand Planers and Jointers.

Pulley on cylinder is $3\frac{1}{2}$ in. diameter, 4 in. face, and should make 4,500 to 5000 revolutions per minute.

Tight and Loose Pulleys on counter-shaft are 10 x 4, and should make 900 revolutions per minute.

Floor Space required, 72 in. by 34 in.

	Weight.	Code Word.
Fig. 72 —To work 8 inches wide.....	800	Forelay.
Fig. 72 A—To work 12 inches wide.....	1,000	Forelock.
Fig. 72 B—To work 16 inches wide.....	1,200	Foremost.
Fig. 72 C—To work 24 inches wide.....	1,400	Forensic.

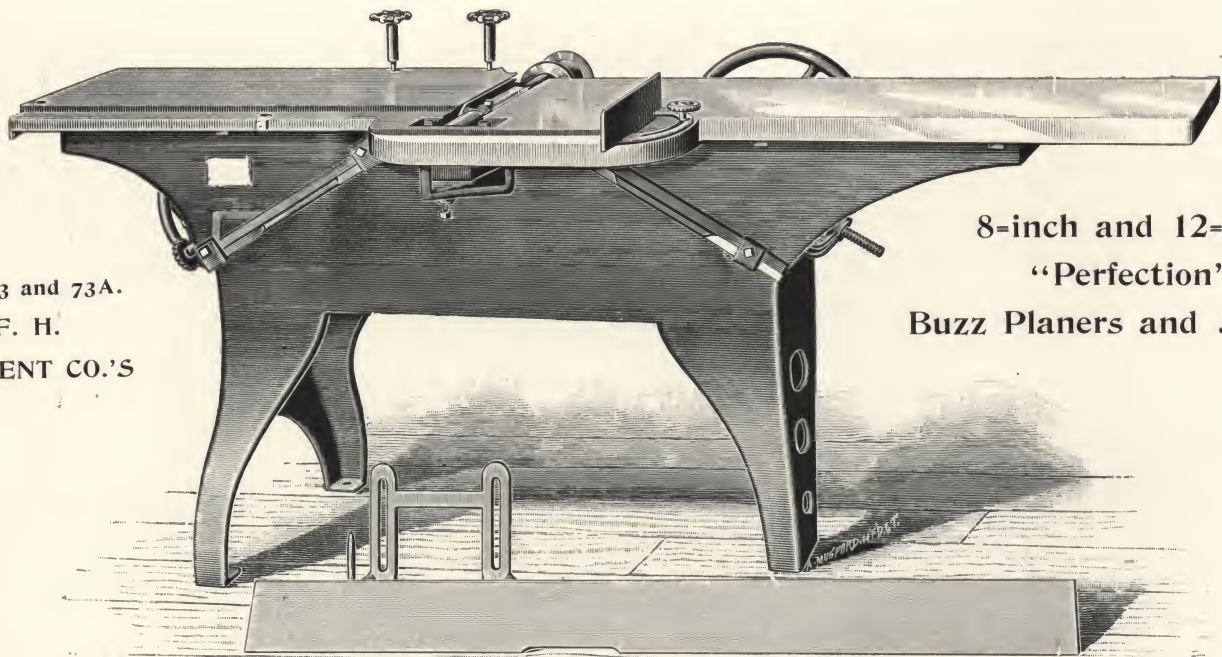


Fig. 73 and 73A.
F. H.
CLEMENT CO.'S

8-inch and 12-inch
"Perfection"
Buzz Planers and Jointers.

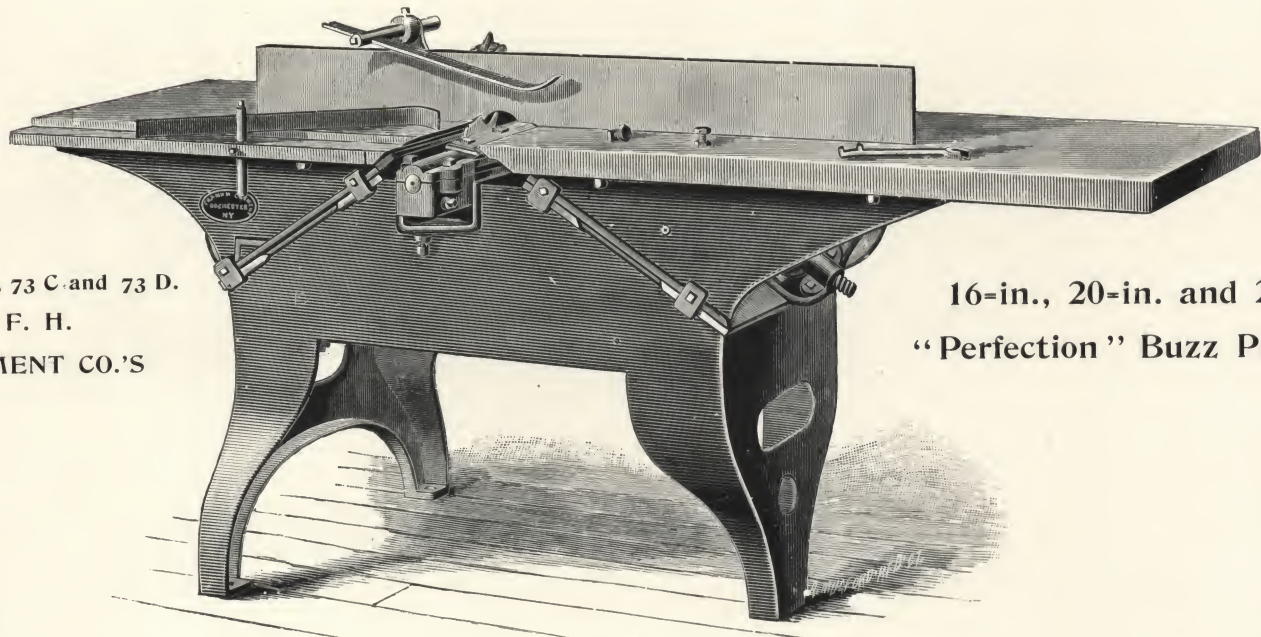


Fig. 73 B, 73 C and 73 D.
F. H.
CLEMENT CO.'S

16-in., 20-in. and 24-in.
"Perfection" Buzz Planers.

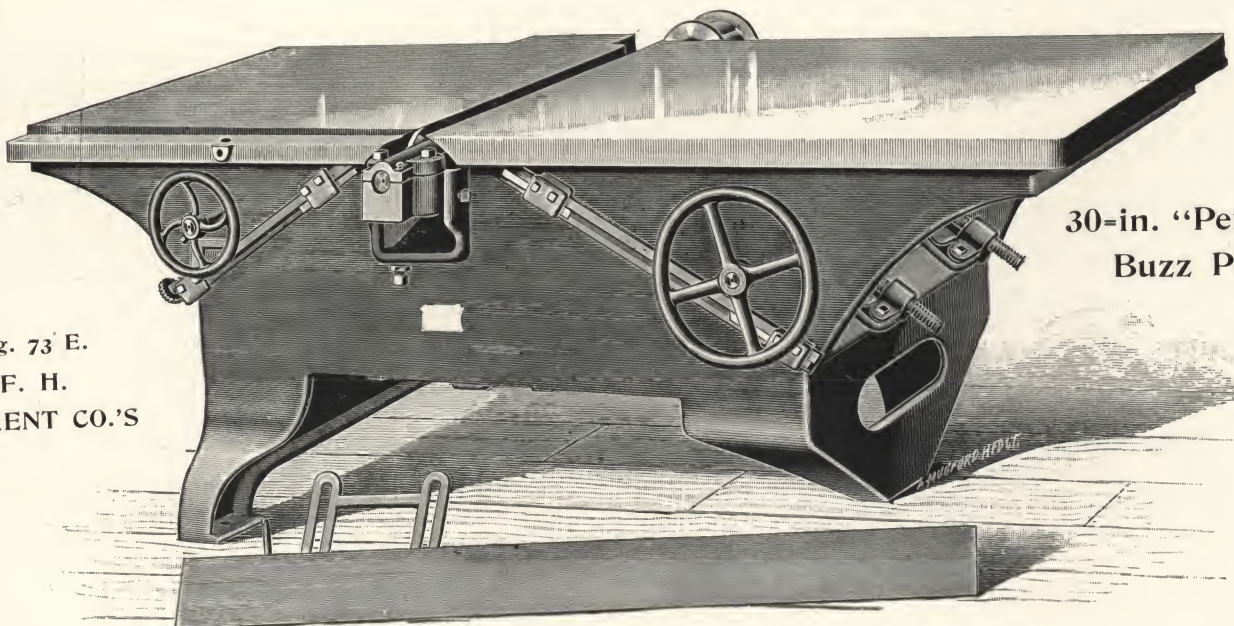


Fig. 73 E.
F. H.
CLEMENT CO.'S

30-in. "Perfection"
Buzz Planer.

AMERICAN WOOD-WORKING MACHINE CO.

F. H. CLEMENT CO.'S

Patent "Perfection" Buzz Planers and Jointers.

THESE Justly Celebrated Machines are, in the opinion of hundreds of experts who are using them, as near perfect in design and construction as any tool can be.

The Frame is cast in one piece; is very heavy and strong, and has three points of bearing on the floor. The table carriages move on continuous inclined ways, and are deeply ribbed in both directions. The cutter-head is a solid steel forging, with main bearing five diameters in length and self-oiling boxes. The rear table has a rabbeting groove $\frac{5}{8}$ of an inch deep, and an adjustment for making hollow glue joints.

An Adjustable Bevel Gauge is provided, secured to the rear or short table, so as not to interfere with the movement of the working table. By a special system and tools the frame and tables are planed absolutely exact, so that no further fitting, adjusting or lining up is required.

All Tables are 7 feet long, and are especially heavy and well ribbed. We take particular pains with the alignment in every direction, so that an absolutely straight joint can be made at any point on the cutter-head. A plain rabbeting bracket, without gauge, is furnished with each machine.

The Cam Cross-Bar under the short table can be adjusted on the inclined ways by slacking the clamp screws. The rear table will then drop down sufficiently to make a hollow or "spring" glue joint.

Both Tables can be drawn away from the cutter-head on a level independently of the inclined ways, so as to leave an opening about 7 inches wide; and dovetailed slots are planed in the cutter-head into which special bolts with nuts are fitted. This arrangement admits of moulding, tonguing and grooving, and other special cutters being attached without removing the straight knives. Thus surfacing and beading, surfacing and moulding, surfacing and grooving, etc., may be done at one operation.

No Other Buzz Planer has the adjustments, solidity of construction, and advantages of this one, nor can others do the wide range of work of which this is capable; such as squaring, smoothing, taking out of wind, glue-jointing, beveling, chamfering, rabbeting, moulding, tonguing and grooving, beading, cornering, cross-gaining, tenoning, etc. It will also stick curved mouldings, such as casing-heads, special inside finish mouldings, etc., which have heretofore been done by hand.

Note the Advantages. There are no links, wedges, pin-joints, cams or eccentrics under the table to get out of adjustment or wear slack; by putting the frame on three legs it is impossible to strain or twist it by bolting down or by the settling of the floor, and there is no projecting flange for the operator to tread upon. By means of the large hand-wheel at the right, the working table can be moved instantly either way, without requiring the operator to change his position in the least. The design and method of fitting up is such that the tables must be true and remain so, and they cannot twist, rock, strain or be displaced, no matter how uneven the foundations on which they are placed.

Attachments and Extras.

We Can Furnish steel lips on tables of all sizes, at a small advance on regular prices.

Spring Attachments for running mouldings and similar work can be applied at any time to any size.

The Rabbeting Table and gauge, shown in the first engraving, is a special attachment which is furnished only on order and can be applied at any time. A plain rabbeting support is furnished with every machine.

Counter-Shafts, with our "Perfect" self-oiling loose pulley, are included unless otherwise ordered.

	T. and L. Pulleys.	Speed.	Weight.	H. P. Required.	Code Word.
Fig. 73 —To work 8 inches wide	8 x 3½	900	950	$\frac{3}{4}$	Forfeit.
Fig. 73 A— " " 12 " "	8 x 3¾	900	1,300	1	Forfend.
Fig. 73 B— " " 16 " "	8 x 4¼	950	1,500	1½	Forge.
Fig. 73 C— " " 20 " "	9 x 5¼	950	1,800	2	Forked.
Fig. 73 D— " " 24 " "	10 x 5¼	950	2,000	3	Forlorn.
Fig. 73 E— " " 30 " "	10 x 5¼	950	2,600	4	Formation.

EXTRAS.

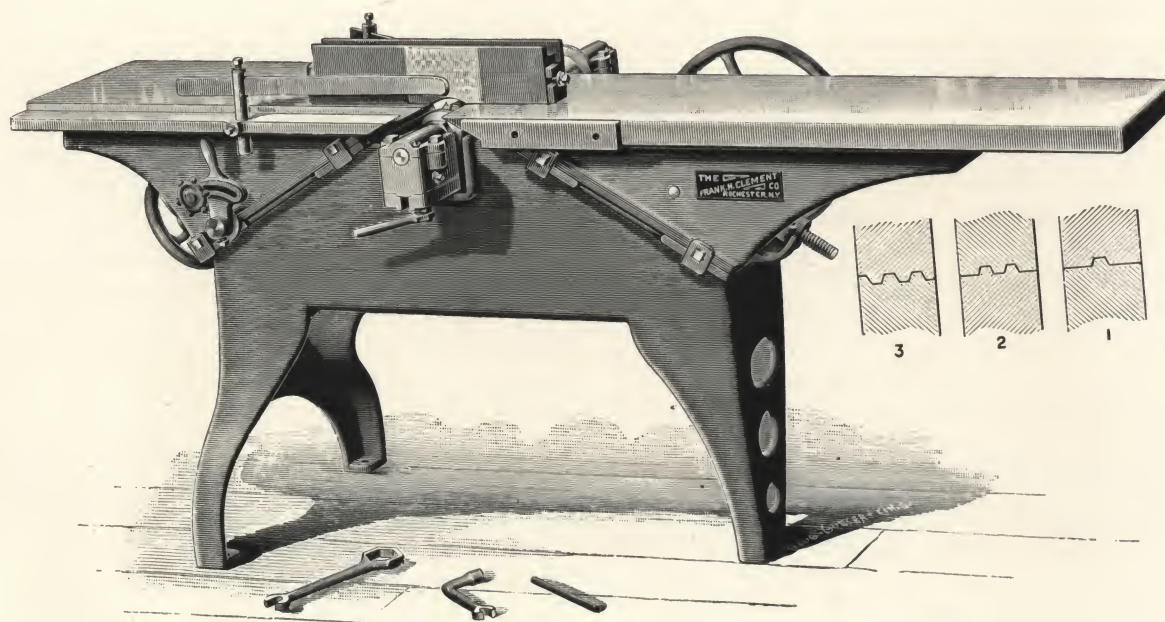
Steel Lips.....	Formedon.
Rabbeting Table and Gauge	Formless.
Spring Attachment, including 4 Dovetail Bolts.....	Forsooth.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 74.

F. H. CLEMENT CO.'S

New Universal V Glue Jointer.



HERETOFORE it has not been practical to make a tongue and groove glue joint on a Buzz Planer, on account of the stock being often crooked so that the tongue and groove were not parallel with the face of the board, and thereby losing the thickness when finished.

By means of special attachments we are enabled to offer this machine as a substitute, in many cases, for the heavy and expensive clamp carriage machines now in use.

The Tables, Slides and Frame are substantially the same as our well known "Perfection" Buzz Planer and Jointer and are very carefully fitted in every detail. The tables are adjustable on the inclined ways for depth of cut, and also horizontally to give access to the cutter head, and have suitable stops to prevent accidents to the knives.

The Main Arbor is of hard steel and has three self-oiling bearings, one of which is readily removable by means of a clamp screw for the purpose of changing the cutters or adjusting them to different positions.

The Cutter Heads are independent and each can be removed without disturbing the adjustment of the knives; by means of collars the distance between them can be varied for different thicknesses of stock. The knives are of solid steel, milled to the required form, so that they remain accurate to shape until used up, and they are arranged to cut very smoothly.

The Special Gauge or guide on the table is made to expand laterally for different thicknesses of work, so that $\frac{5}{8}$ in. to $1\frac{1}{4}$ in. stuff may be jointed, and by one change of collars between the cutter heads the range can be from $\frac{5}{8}$ to 2 in. thick. The gauge accommodates itself to crooked stock and there is thus no loss in thickness after planing. Both faces of the gauge are alike, so that a piece is finished at one handling.

A Hollow or "Spring" Joint is obtained by means of the cam on the rear table, and this can be used in connection with the V cutters as well as for plain jointing. Springs are provided to retain the stock against the gauge on both sides.

When Ordered a plain cutter-head and knives are furnished at a slight extra charge. In this case the machine becomes a Universal Jointer, making plain, single V or combination joints, either straight or hollowing in both cases.

The Counter-Shaft has 8 x $3\frac{3}{4}$ in. self-oiling loose pulley and should run about 900 per minute.

The Workmanship is specially fine in every detail, and we guarantee satisfaction on fair trial.

Three Forms of joint are shown in the engraving, but we can make other forms as required. No. 1 is recommended for general use.

Fig. 74 —V Jointer complete, one pair heads, special gauge and counter-shaft.....

Fig. 74 A—Plain Jointer Head and Gauge, additional.....

Code Word.

Fortify.

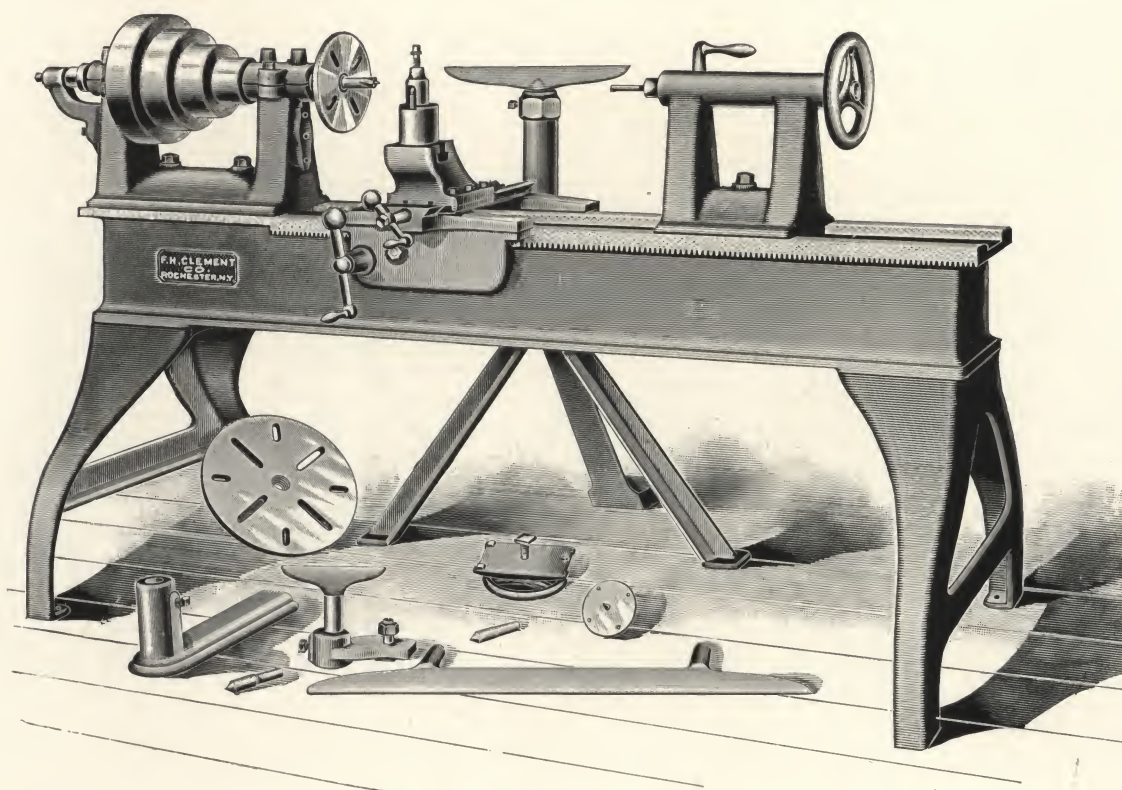
Fortune.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 75.

F. H. CLEMENT CO.'S

Pattern Makers' Lathe, with Slide Rest.



FOR a great deal of Pattern Turning a fixed tool and accurate lines of feed are essential, especially on such as require exactness of outline. To meet the demand for such tools we have just brought out two sizes, as represented in above engraving.

The Carriage has a long bearing on the bed which is carefully fitted by scraping. The cross feed screw has a square thread and there is a nicely fitted gib on the tool slide to take up wear, and a take-up gib on the back of the carriage on the bed.

The Apron Gearing is cut, and the pinions are steel. The tool post or poppet head is of steel, with hardened set screw, and receives tools $\frac{5}{8}$ inch thick.

The Head and Tail Spindles, screws, and all centers, are of steel; the tail screw has square threads, and the hand wheel is turned and polished.

The Main Bearing Caps are planed into ledges on the head-stock and lined with genuine babbitt, which is carefully scraped and the journals nicely fitted, so as not to heat when started. All surfaces resting on the bed are planed true and carefully fitted down.

The Head Stock Cone is of iron, specially strengthened inside but quite light, and it can be reversed, when ordered, to bring the large lift next the head center. The counter-shaft has kiln-dried wood cone, glued up in layers with grain crossed, and finished in shellac, and it is fastened at both ends to the shaft.

The Main Arbor extends at both ends with reversed threads as usual, and there is a detachable yoke to take the end thrust, provided with a bronze step and a hardened steel center pin. A large face plate for the overhanging end of the arbor, and a heavy floor rest stand are furnished.

A Compound Rest will be furnished when ordered, in place of the rigid cross-slide, at a reasonable extra charge.

The Parts usually furnished are Head and Tail Stocks, one pair Wood Centers, one pair Conical Centers, Rosette Chuck, two Face Plates, two Rest Sockets, three T rests, Counter-shaft and Hangers, and Floor Rest Stand. We furnish 20 and 24-inch Swing Lathes on these beds, which may be 8, 10 or 12 feet long as required.

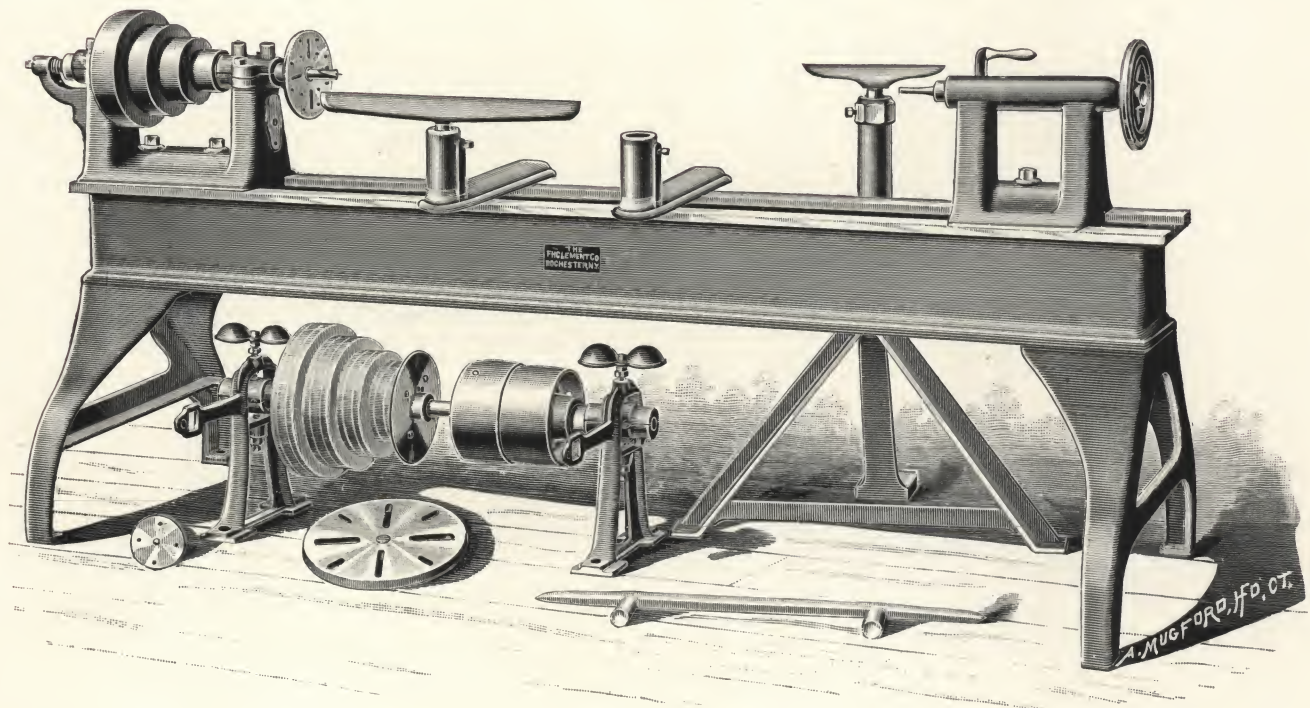
	Swing.	T. and L. Pulleys.	Speed.	Length of Bed.	Weight.	Code Word.
Fig. 75	20 in.	9 x 4 $\frac{1}{2}$ in.	600	8 feet.	1,300	Fossil.
Fig. 75 A.	24 in.	10 x 4 $\frac{1}{2}$ in.	550	8 feet.	1,500	Foster.
Extra for Compound Rest in place of plain Cross Slide.....						Fought.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 76.

F. H. CLEMENT CO.'S

Improved Iron-Bed Pattern Makers' Lathe.



WOOD Working Machines with iron frames are coming more and more into use as wood-workers recognize their good points. To meet this demand we make either Hand or Pattern Makers' Lathes on heavy iron beds with iron legs. These are planed true and the Head and Tail Stocks are carefully fitted to them and suitably secured by clamping bolts.

The Head and Tail Spindles, screws, and all centers are of steel; the tail screw has square threads, and the hand wheel is turned and polished.

The Main Bearing Caps are planed into ledges on the head-stock and lined with fine babbitt, which is carefully scraped and the journals nicely fitted, so as not to heat when started. All surfaces resting on the bed are planed true and carefully fitted down.

The Head Stock Cone is of iron, specially strengthened inside but quite light, and it can be reversed, when ordered, to bring the large lift next the head center. The counter-shaft has kiln-dried wood cone, glued up in layers, with grain crossed, and finished in shellac, and it is fastened at both ends to the shaft.

The Main Arbor extends at both ends with reversed threads as usual, and there is a detachable yoke to take the end thrust, provided with a bronze step and a hardened steel center pin. A large face plate for the overhanging end of the arbor, and, a heavy floor rest stand are furnished.

The Parts usually furnished are Head and Tail Stocks, one pair Wood Centers, one pair of Conical Centers, Rosette Chuck, two Face Plates, two Rest Sockets, three T Rests, Counter-Shaft and Hangers, and Floor Rest Stand. We furnish 20 and 24 inch Swing Lathes on these beds, which may be 8, 10 or 12 feet long, as required.

A Geared Carriage with rack and suitable hand-cranks, cross feed screw, tool post and rest socket, are furnished with this machine at an extra price when wanted. These parts are all nicely fitted and are true and square.

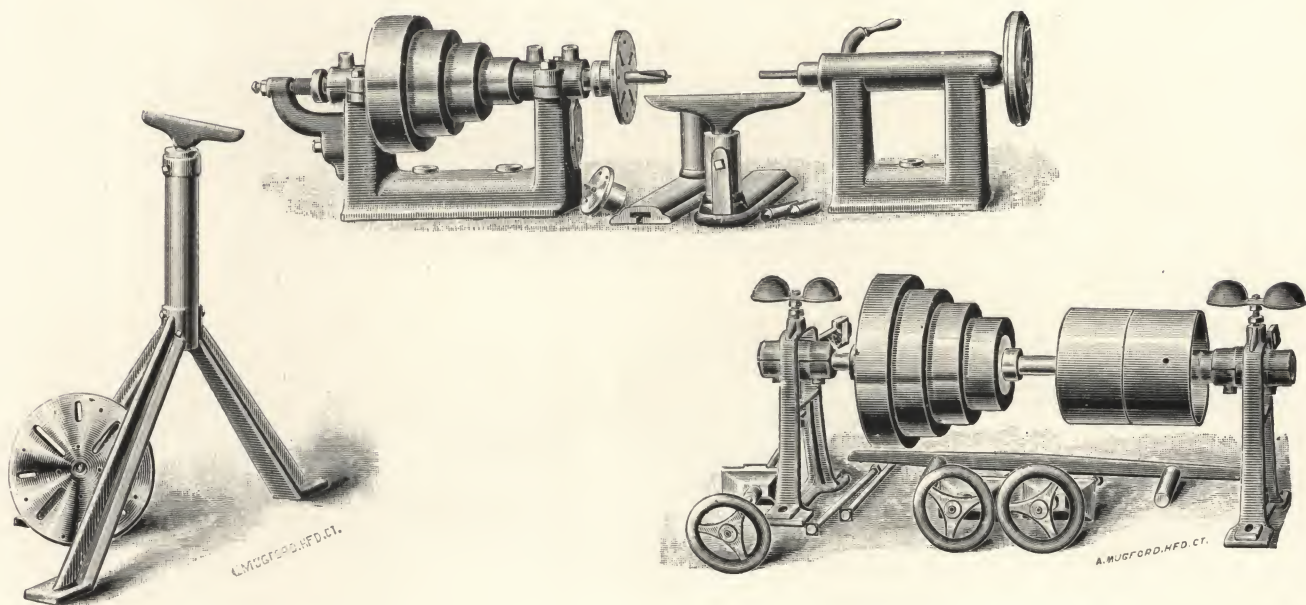
	Swing.	T. and L. Pulleys.	Length of Bed.	Speed.	Weight.	Code Word.
Fig. 76	20 in.	9 x 4½ in.	8 ft.	600 to 650	1,250	Foundry.
Fig. 76 A	24 in.	10 x 4½ in.	8 ft.	600	1,400	Fountain.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 77.

F. H. CLEMENT CO.'S

Improved Pattern Makers' Lathes.



THESE TOOLS are manufactured from new designs, embodying many advantages not usually found in such lathes. The head and foot stocks are cored hollow and made heavy and rigid so as to resist vibration or "chatter." The head and tail spindles and all centers are of steel; the tail screw has square threads, and the hand wheel is turned and polished.

The **Main Bearing Caps** are planed into ledges on the head-stock and lined with fine babbitt, which is carefully scraped and the journals nicely ground and fitted, so as not to heat when started. All surfaces resting on the bed are planed true and do not require fitting down if the bed is true.

The **Head Stock Cone** is of iron, specially strengthened inside but quite light, and it can be reversed, when ordered, to bring the large lift next the head center. The counter-shaft has kiln-dried cherry cone, glued up in layers with grain crossed, and it is fastened at both ends to the shaft.

The **Main Arbor** extends at both ends with reversed threads, as usual, and there is a detachable yoke to take the end thrust, provided with a bronze step and a hardened steel center pin. A large face plate for the overhanging end of the arbor and a heavy floor rest stand, shown in separate engraving, are furnished.

The **Parts** usually furnished are Head and Tail Stocks, one pair Wood Centers, one pair of Conical Centers, Rosette Chuck, 2 Face Plates, 2 Rest Sockets, 3 Rests, Counter-shaft and Hangers, Floor Rest Stand, and Clamp Bolts with Hand Wheels for bed 10 to 12 inches deep.

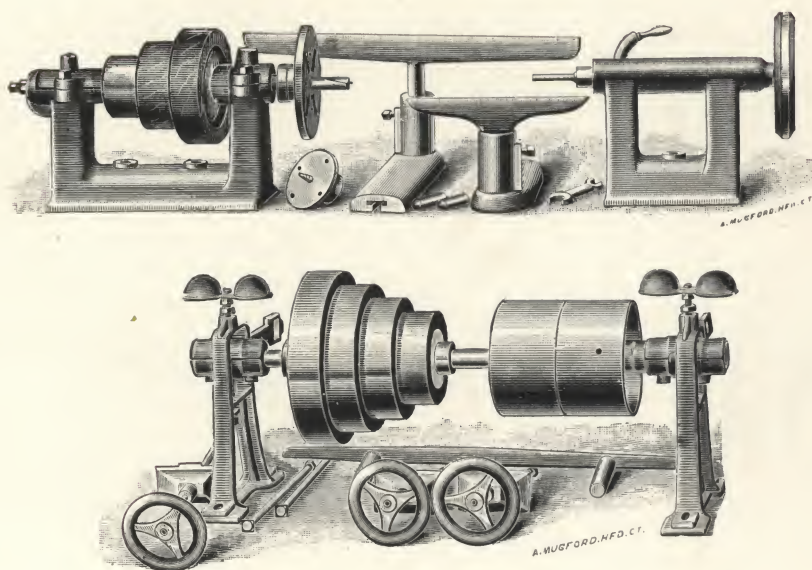
Swing	Diam. Head Spindle.	Length Journal.	Width Cone Belt.	T. & L. Pulleys.	Speed of Counter Shaft.	Shipping Weight (No Bed.)	Code Word.
Fig. 77 —16 inches.	1½ inch.	5½ inches.	2 inches.	8 x 3¾ ins.	600 to 700	550	Fowling.
Fig. 77 A—20 inches.	1¾ inch.	6 inches.	2½ inches.	9 x 4¼ ins.	600 to 700	720	Fowler.
Fig. 77 B—24 inches.	2 inch.	7 inches.	3 inches.	10 x 4½ ins.	600 to 700	850	Foxery.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 78.

F. H. CLEMENT CO.'S

Improved Hand Lathes.



THESE TOOLS are manufactured from new designs, embodying all the advantages that are usually found in first-class hand lathes. The head and foot stocks are cored hollow and made heavy and rigid so as to resist vibration or "chatter." The head and tail spindles and all centers are of steel; the tail screw has square threads, and the hand-wheel is turned and polished.

The Main Bearing Caps are planed into ledges on the head-stock and lined with fine babbitt, which is carefully scraped and the journals nicely fitted, so as not to heat when started. All surfaces resting on the bed are planed true and do not require fitting down if the bed is true.

The Head-Stock Cone is of iron, specially strengthened inside but quite light, and it can be reversed to bring the small lift next the head center. The counter-shaft has a kiln-dried cherry cone glued up in layers with grain crossed, and it is fastened at both ends to the shaft.

The Parts usually furnished are Head and Tail Stocks, one pair Wood Centers, Rosette Chuck, Face Plate, two Rest Sockets, three T Rests, Counter-shaft and Hangers, and Clamp Bolts with hand-wheels for bed 10 to 12 inches deep.

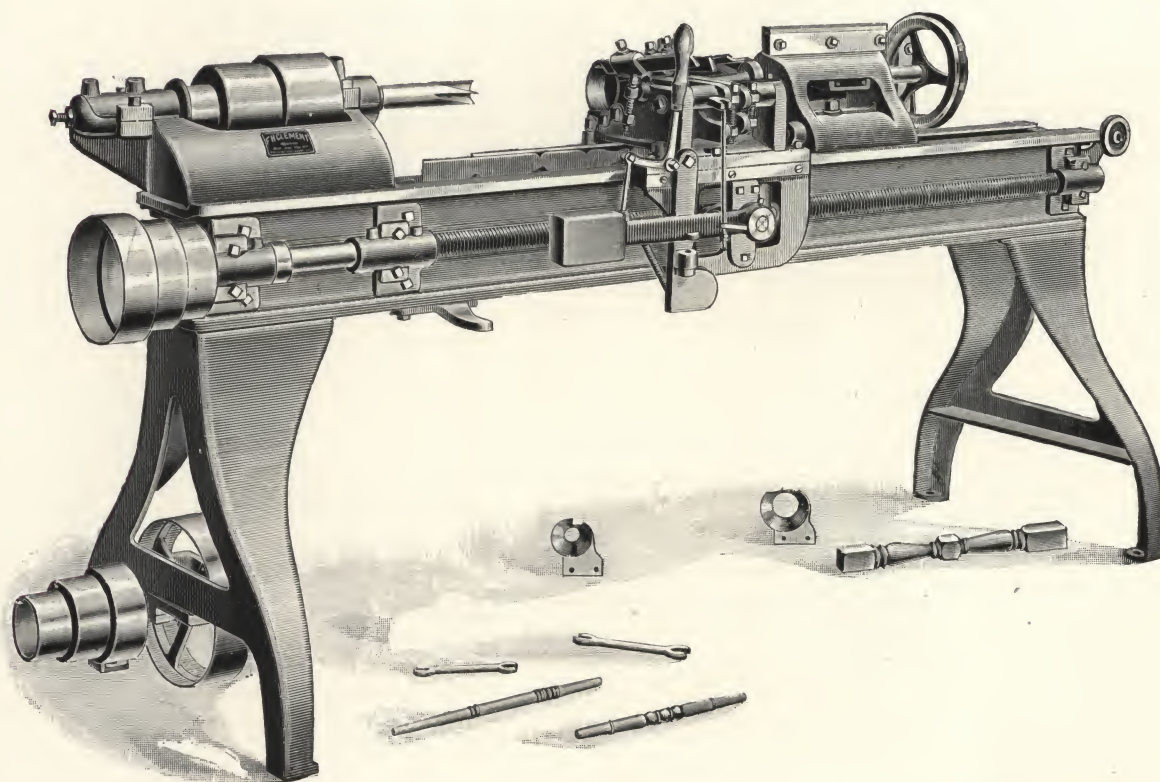
Wood or Iron Beds furnished when required at an extra price.

Swing.	Diameter Head Spindle.	Length Journal.	Width Cone Belt.	T. and L. Pulleys.	Speed of Counter-Shaft.	Ship'g Weight. (No Bed.)	Code Word.
Fig. 78 —12 inch.	1¼ inch.	4 inch.	1¾ inch.	7 x 3½ inch.	600 to 700	280	Foxhole.
Fig. 78 A—16 inch.	1½ inch.	5 inch.	2 inch.	8 x 3½ inch.	600 to 700	420	Foxtail.
Fig. 78 B—20 inch.	1¾ inch.	6 inch.	2½ inch.	9 x 4¼ inch.	600 to 700	550	Foxtrap.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 79.

F. H. CLEMENT CO.'S Patent Automatic Gauge Lathes.



THESE are identical with the machines shown on page 84, with the exception that the pattern knife gate and slides are omitted.

The Main Arbors and Centers, tail center, feed and tail screws, are of steel, and all the babbitt bearings are extra long, and carefully scraped. The patent self-center is gibbed directly to the bed of the lathe, and is strong and accurate and will not tremble or chatter. It may or may not be used, according to the work in hand.

The Three Turning Chisels are arranged with adjusting screws, so that they can be set absolutely accurate as to diameter of stick without stopping either the feed or the lathe; the V, or forming chisel, is automatically lifted from the form on the return of the carriage so that the wear of the form is almost entirely avoided.

The Feed Screw and Nut and the automatic attachments for throwing off the feed, are extremely simple and sure in their action, and suitable arrangements are made for taking up the wear. The feed-nut is of the best quality of babbitt and may be easily replaced in the shop. There are three bearings on the feed screw.

The Tail Center revolves in double tapering babbitted bearings arranged to take up wear, the end pressure being taken on a phosphor bronze step.

Three Sizes of these lathes are made:—No. 1, which takes stock to $2\frac{1}{4}$ inches diameter and 27 or 36 inches long, three turning chisels. No. 2, taking stock to 3 inches diameter and 40 or 50 inches long, three turning chisels. No. 3, taking 5 inches diameter and 40 or 50 inches long, 4 turning chisels.

One Set of Turning Chisels, three dies and two spur centers are furnished with each lathe, and extras will be furnished at reasonable prices.

Counter-Shafts with tight and self-oiling loose pulleys and suitable cone pulley are included. All fitting is first-class, and all parts are designed with special regard to strength, convenience and utility.

	Length.	T. and L. Pulleys.	Speed.	Weight.	Code Word.
Fig. 79	27 inches.	10 x $5\frac{1}{4}$ in.	1,000	1,250	Fraction.
Fig. 79 A	36 inches.	10 x $5\frac{1}{4}$ in.	1,000	1,450	Fragile.
Fig. 79 B	40 inches.	10 x $6\frac{1}{4}$ in.	1,000	1,700	Frailty.
Fig. 79 C	50 inches.	10 x $6\frac{1}{4}$ in.	700 to 1,000	1,900	Framable.
Fig. 79 D	40 inches.	12 x $7\frac{1}{4}$ in.	850	2,000	Francatu.
Fig. 79 E	50 inches.	12 x $7\frac{1}{4}$ in.	600 to 850	2,200	Franchise.

Fig. 80 and 80A.

F. H. CLEMENT CO.'S

No. 1 Automatic Lathe. 30 to 36 Inches Between Centers.

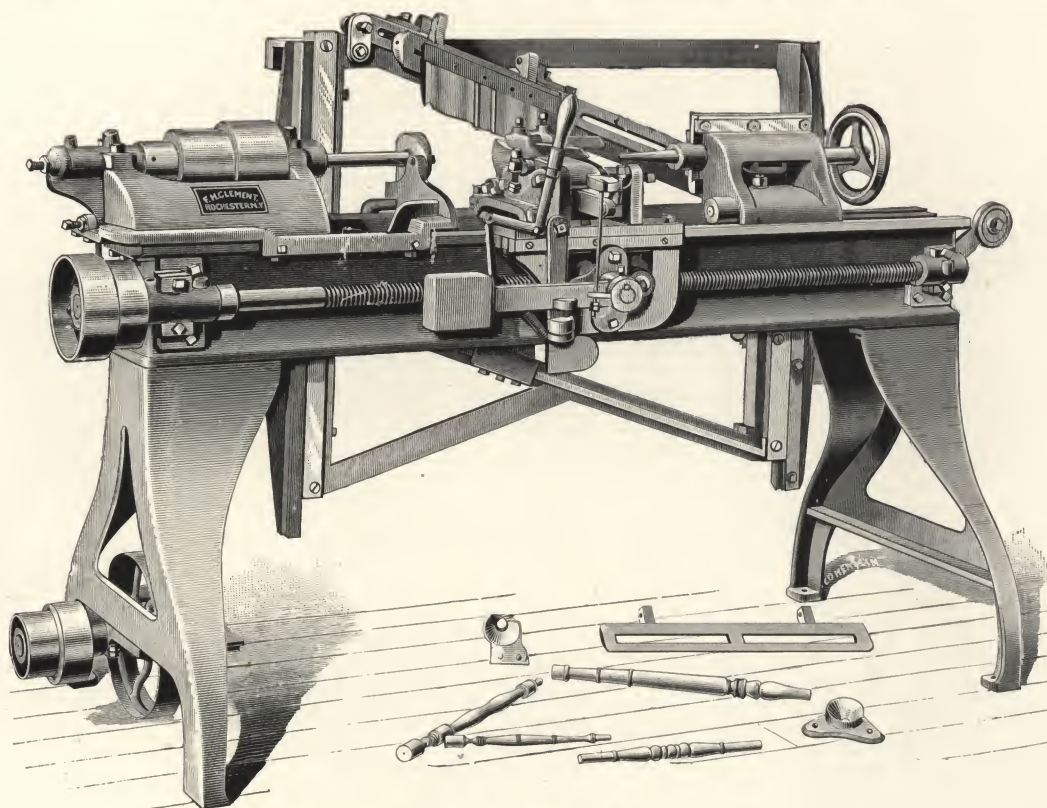
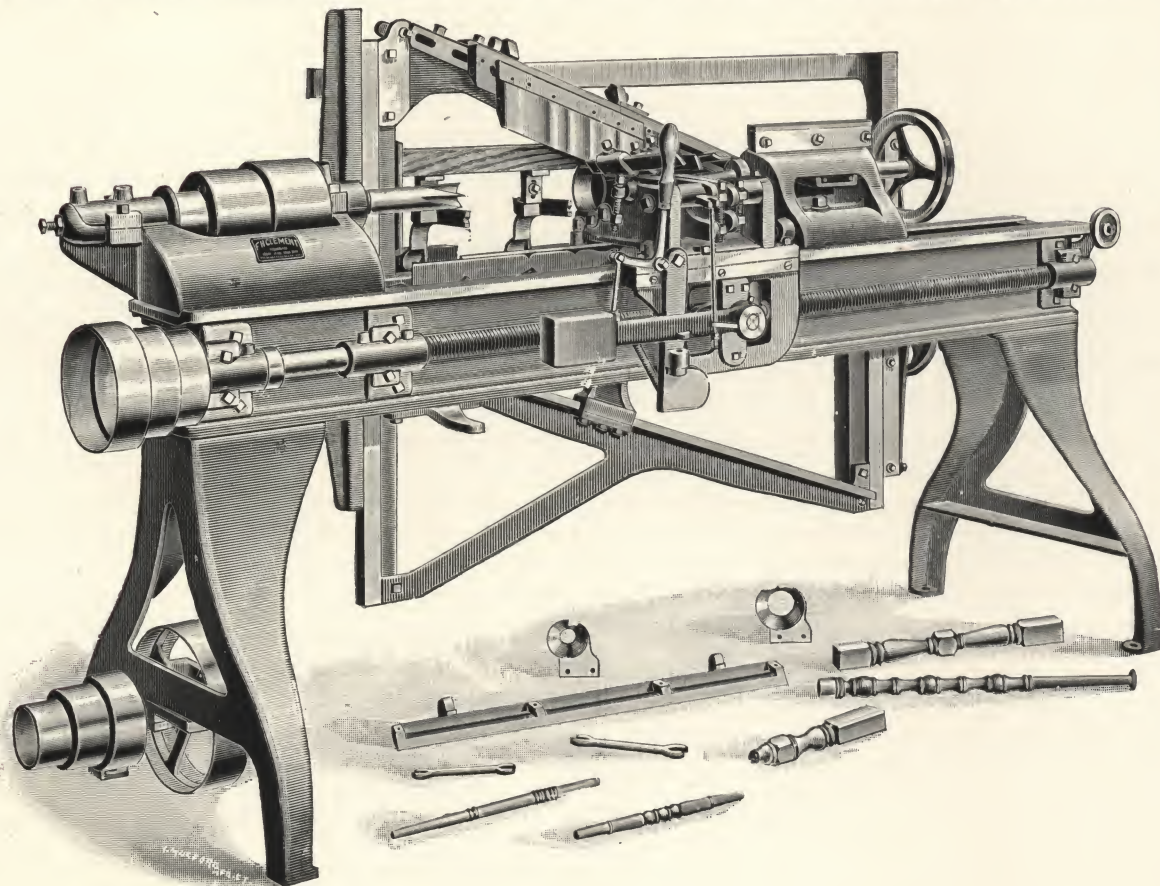


Fig. 81 and 81A.

F. H. CLEMENT CO.'S

No. 2 Automatic Lathe. 40 to 50 Inches Between Centers.



AMERICAN WOOD-WORKING MACHINE CO.

F. H. CLEMENT CO.'S

Patent Automatic Back-Knife Lathes.

THESE Well-Known Machines have been a specialty with us for nearly 20 years, and we have spared no expense for improvements, new patterns, special tools and facilities for manufacturing them in the best manner. We are, so far as we can ascertain, the largest manufacturers of this style of lathe in the country, and we have the widest range of sizes and lengths. We hold also a number of valuable patents on improvements which are quite essential to the success of such lathes in practice. We have gauges, templets and jigs for every part, and manufacture them in lots and by systematic and careful methods.

General Description.

Three sizes of these lathes are manufactured, and they are all made in two different lengths. They are all first-class gauge lathes, as well as back-knife lathes, and can be used on a great variety of work without the knife gate, the smoothing or gauge chisel finishing the plain swells or tapers nicely.

The Beds are strong and well tied transversely, and the legs and all attached parts extra heavy and firmly secured.

The Main Boxes are long and lined with the best quality of babbitt metal carefully scraped to the journal, and the caps are planed into ledges to prevent side motion.

The Turning Chisels all have our patent adjustable screw tool-stocks, by which they may be adjusted in the cut while the lathe is in motion.

The Main Arbor, Centers and Tail Spindle are of cast steel, the first and last named being hardened at the ends, and end pressure taken on hard steel washers against a bronze step. The journals are ground (not filed).

The Feed Screw is of steel, with a heavy thread, cut so as to resist wear, and the **Patent Oscillating Feed Nut** is nearly five times the diameter of the screw in length and closes squarely into the thread. This improvement is a very important one, and greatly reduces the wear at this vital point.

The Tail Center has double tapering, ground bearings, and is very long and rigid, the wear being taken up by an end adjustment screw.

The Back Gate moves in carefully scraped ways, firmly secured to the bed and tied to each other at top and bottom. It is counter-balanced at both ends.

The Patent Intermediate Knife Bed, to which the pattern knives are attached, is used exclusively in these lathes, and saves a great deal of time in "setting up" for a change of work, and also avoids shifting knives for sharpening and re-adjusting afterwards. This device often saves a large item of expense for pattern knives, in connection with a gauge or smoothing chisel, working on a separate form.

A Self-Centering Attachment is furnished, consisting of arms swinging through the back gate and supporting the stock on brackets until caught on the centers. This arrangement is shown in cut of No. 2 Lathe.

Cut-off Attachments are furnished when ordered in the usual form. All pattern knives are extra.

Specifications for No. 1 Lathe.

Turns from $\frac{1}{4}$ inch to $2\frac{1}{4}$ inches diameter, and 3 inches to 30 or 36 inches long, and will leave squares $1\frac{3}{4} \times 1\frac{3}{4}$ inches at any point. Has one set (2) of turning chisels (or 3 if required); three (3) dies or steady collars, two (2) spur centers, three (3) knife beds, four (4) balancing sheaves, four (4) counter weights, counter-shaft with $10 \times 5\frac{1}{2}$ inch T. and L. (self-oiling) pulleys.

This size will take all ordinary chair work, furniture spindles, duster and brush handles, etc. From 1,200 to 3,000 pieces per day can be turned.

Specifications for No. 2 Lathe.

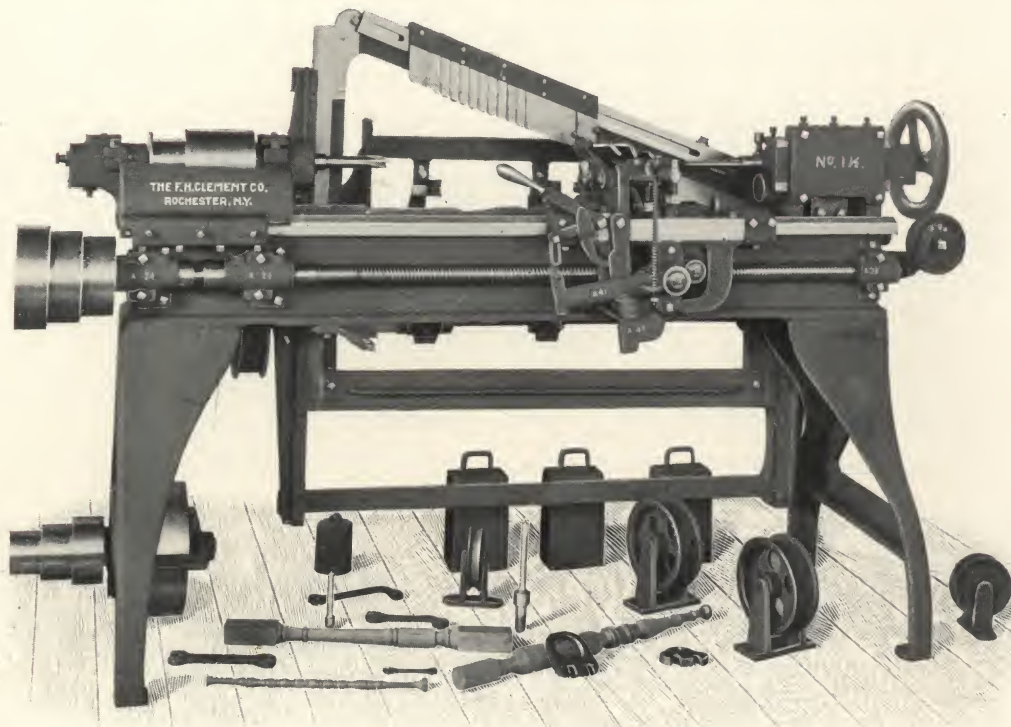
Turns from 4 inches to 40 or 50 inches long, and $\frac{1}{4}$ to 3 inches diameter, and will leave squares $2\frac{1}{4} \times 2\frac{1}{4}$ inches. Has one set (3) of turning chisels, three (3) dies or steady collars, two (2) spur centers, three (3) knife beds, four (4) balancing sheaves, four (4) counter weights, complete counter-shaft with $10 \times 6\frac{1}{4}$ inch T. and L. (self-oiling) pulleys.

This size is used for all kinds of chair stock, stand legs, small table legs, balusters, handles, spindles, etc. This is the favorite size for general work, and there are a large number of them in operation in the best shops in the country. From 1,000 to 2,500 pieces per day can be turned with this lathe.

	Length.	Weight.	T. and L. Pulleys.	Speed.	Code Word.
Fig. 80 —No. 1.....	30 in.	1,750 lbs.	$10 \times 5\frac{1}{4}$ in.	1,000	Freckled.
Fig. 80A.—No. 1.....	36 in.	1,900 lbs.	$10 \times 5\frac{1}{4}$ in.	1,000	Freebody.
Fig. 81 —No. 2.....	40 in.	2,300 lbs.	$10 \times 6\frac{1}{4}$ in.	1,000	Freeborn.
Fig. 81A.—No. 2.....	50 in.	2,600 lbs.	$10 \times 6\frac{1}{4}$ in.	700 to 1,000	Freedom.

Fig. 82.

F. H. CLEMENT CO.'S
No. 1½ Patent Automatic Lathe.



WITH OR WITHOUT SLIDING HEAD STOCK.

THIS is an entirely new design, embodying all the latest improvements and practical suggestions of both users and manufacturers, and we recommend it as exactly adapted to all kinds of chair turning and for furniture work up to 2¾ inches in diameter.

The Bed is deep and strong and well tied transversely. **The Head Stock** slides on the ways with suitable gibs, which are adjustable in both directions, and it is connected to the tail wheel by a steel bar and a strong clamping device.

The Head Spindle is made of hammered crucible steel 1½ inches diameter, and the bearings are extra long and finished by grinding and buffing; the boxes are self-oiling and are lined with genuine babbitt and carefully scraped to the journals.

The Tail Stock has a very large hand wheel and a quick screw by which the head stock and driving center are forced forward quickly, driving the spurs into the work with one pull of the wheel.

The Tail Center revolves in tapering bronze bearings with means of taking up the wear, and it is divided so that the outer section which supports the work can be changed quickly to different diameters. The tail bearing and center are adjustable vertically, and the head stock and center are adjustable horizontally and they may thus be always kept in line.

The Carriage has a bearing on a V way or track 20 inches long and is provided with gibs to take up wear both in front and at the rear. There are usually two turning chisels provided, one to rough out the stuff to fit the die or steady collar, and one forming or V chisel to shape the piece to the pattern. When required, a third chisel stock is added for turning tapers and swells without the use of a back knife.

The Turning Chisels have our patent adjustable screw tool stocks by which they may be adjusted in the cut while the lathe is in motion.

The Dies or Steady Collars are of steel and are self-centering and clamped by two steel studs with nuts; the dies can thus be changed instantly by slacking the nuts, and they come to the center accurately.

The Back Knife Slide is directly attached to the carriage by an adjustable hanger from the upper bar; by this means there is no springing of the parts between the carriage and the back knife, making much smoother work and saving time.

Centering Arms swing from a shaft at the rear of the bed, upon which the stock is laid while the previous piece is being turned, and which bring it accurately to the center. They may be adjusted to any diameter and length of stick, and are considered indispensable in doing quick and good work.

The Feed Nut Device is arranged to be thrown in or out by the same lever, and is very easy and sure in operation, the half nuts closing squarely into the feed screw; the nuts are lined with genuine babbitt and will run for years with ordinary care without re-babbitting.

A Cutting Off chisel is supplied at the head end of the lathe when so ordered.

Capacity: Four lengths of this pattern are made, receiving stock 27 inches, 36 inches, 44 inches and 52 inches long between the centers, and they all turn from ¾ to 2¾ inches diameter, and will leave squares 2 x 2 inches at any point; from 600 to 3000 pieces per day can be turned, dependent on the length, diameter and condition of the stock.

The Counter-Shaft is turned steel and has our improved self-oiling loose pulley with detachable babbitted bush. T. & L. pulleys are 10 x 6¼ inches, and they should run from 750 to 1000, according to length and diameter of stock.

Parts Furnished with each lathe are: Complete counter-shaft with hangers and belt shifter; six steel dies or steady collars, various sizes; one set of turning chisels; two spur or driving centers; two tail center tips; complete set of four sheave hangers and weights for counter balancing the knife slide and carriage.

The Workmanship is excellent in every detail, and we manufacture them systematically with jigs, gauges and templates to accurate dimensions.

These Lathes are first-class gauge lathes without the use of the back knife slide, and when ordered we can furnish them that way, but fitted and drilled to receive the attachment at any time. When so ordered the oscillating centering arms are included.

	Length.	Weight.	Code Word.
Fig. 82	27 inches.	1800	Freeman.
Fig. 82 A	36 inches.	2000	Freeness.
Fig. 82 B	44 inches.	2200	Freestone.
Fig. 82 C	52 inches.	2600	Freewill.

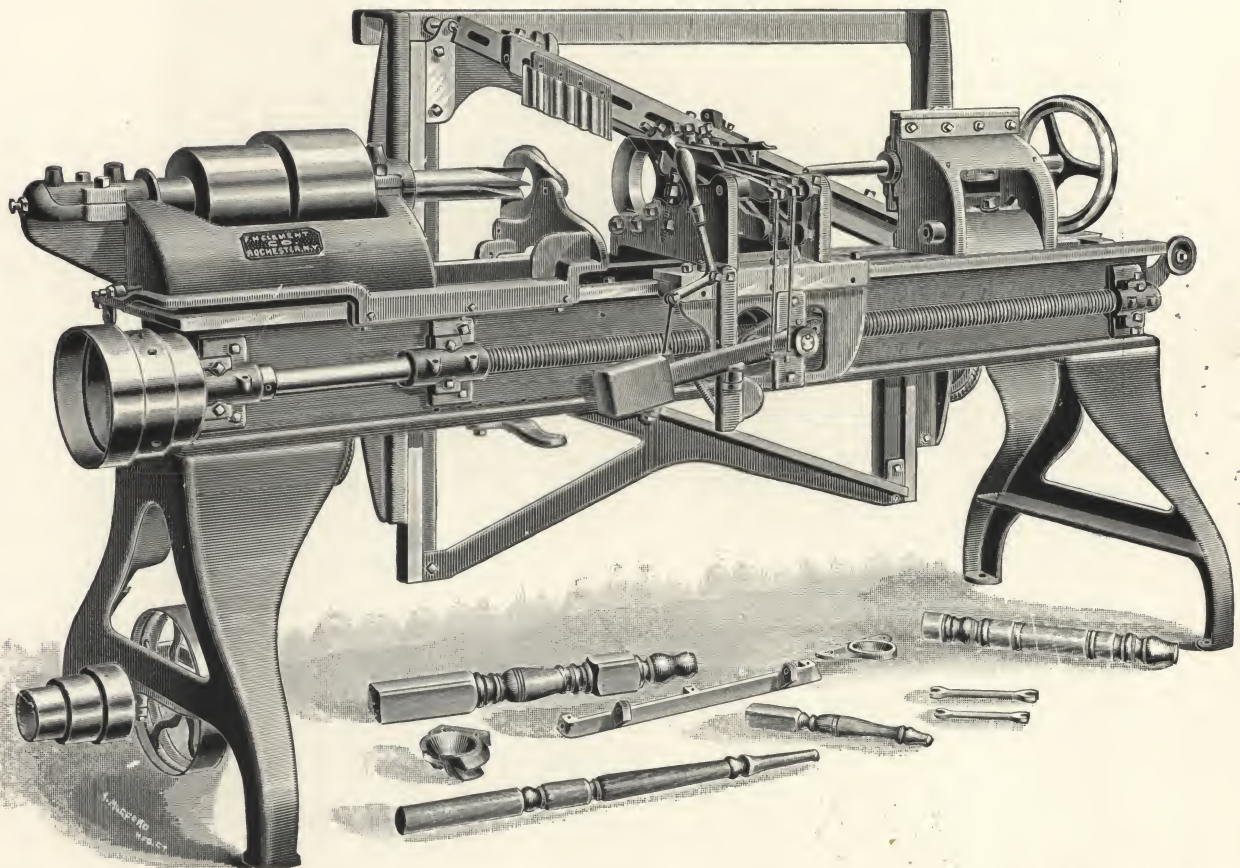
AMERICAN WOOD-WORKING MACHINE CO.

Fig. 83.

F. H. CLEMENT CO.'S

No. 3 Automatic Back-Knife Lathe.

40 TO 50 INCHES BETWEEN CENTERS.



THIS is the most successful machine for turning table and furniture legs of all kinds with squares, crib and bed posts, neck-yokes, and similar heavy work, there is now in the market.

It is very heavy and substantial in all its parts, and has all the attachments and improvements suggested by long experience in manufacturing and operating this class of machines. There are four turning chisels, all with patent screw-adjusting stocks, and work from $\frac{3}{4}$ inch at smallest diameter up to 5 inches can be turned, and squares left on 4 x 4 stock. The same care has been taken in its design and construction as in the other sizes previously described, and the details are similar except where otherwise stated.

Specifications.—Turns from 6 inches to 40 or 50 inches long. Has one set (4) of turning chisels, three (3) dies or steady collars, two (2) spur centers, three (3) knife beds, four (4) balancing sheaves, complete counter-shaft with 12 inch x $7\frac{1}{4}$ -inch T. & L. Pulleys. Speed about 850. Shipping weight, 3,200 to 3,600 lbs. From 600 to 1,500 pieces per day can be turned on this lathe.

It is used in many large works for extension table legs, of which 600 to 1,000 per day can be turned.

Fig. 83 B.

F. H. CLEMENT CO.'S

Pattern or Back-Knives.

WE make Shear or Pattern Knives to order for all Automatic Lathes, and take great pains with the finish, workmanship and temper. We use only the best double refined edge-tool steel, and guarantee satisfaction. The stock is rolled specially for us, and is the heaviest per inch of length used by any maker. Gouges, V-chisels and finishers or smoothers furnished for all of our gauge and Back-Knife Lathes.

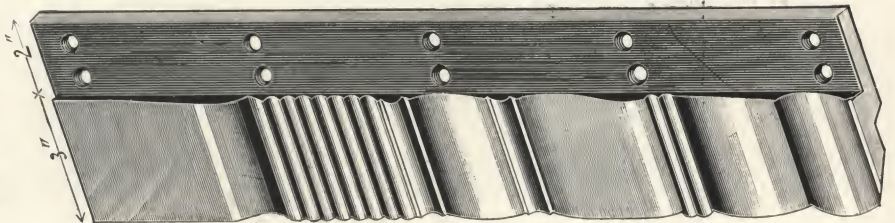


Fig. 83 —No. 3, 40 inch Lathe complete.....

Fig. 83 A—No. 3, 50 inch Lathe complete.....

Fig. 83 B—Pattern or Back Knives

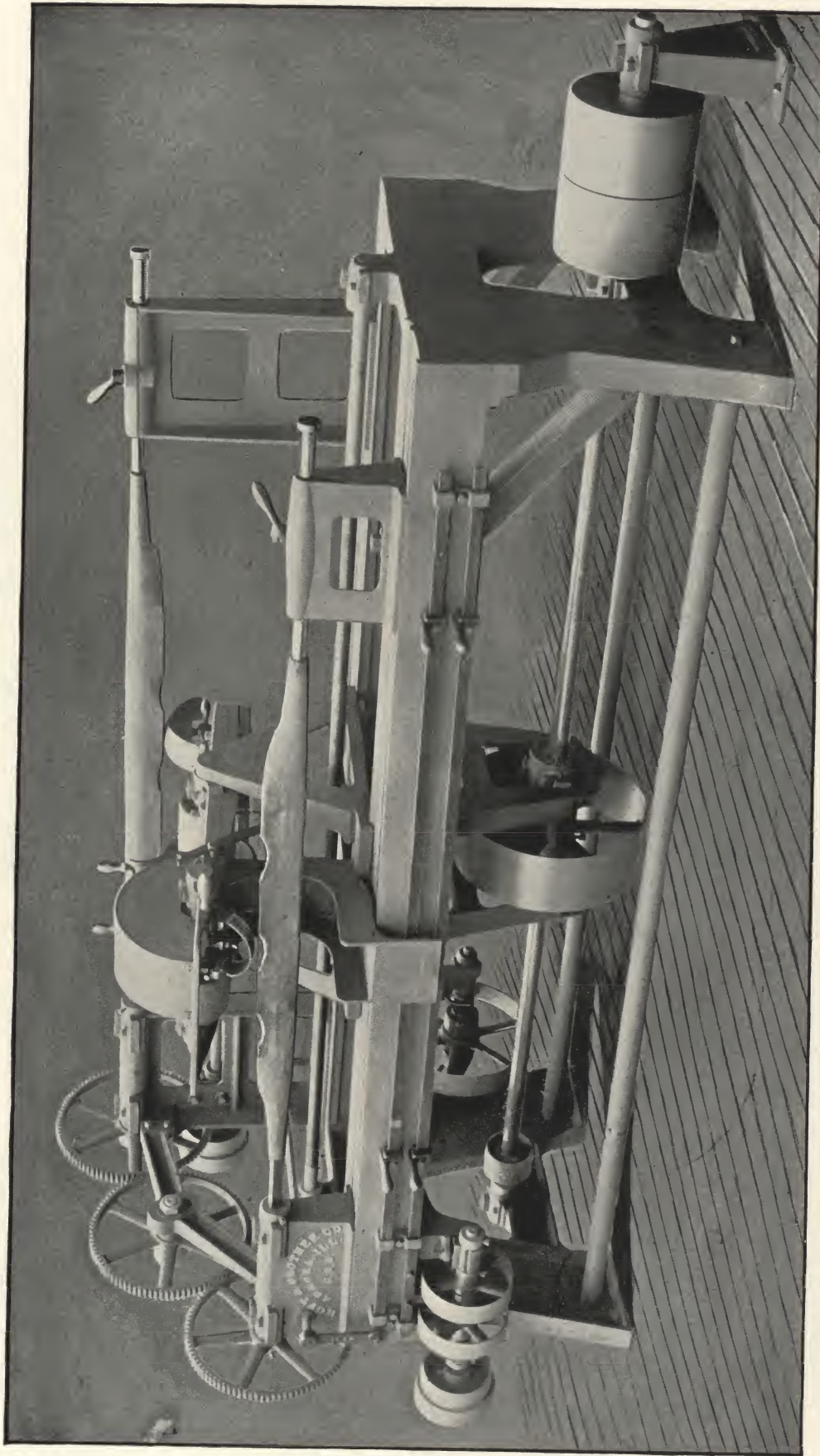
Code Word.

Frenzy.

Fresco.

Freshman.

Fig. 84.
HOYT & BROTHER CO.'S
New Improved Axle-Tree Lathe.



There probably never was a more successful machine built than our **Old Axle-Tree Lathe**, as its use in ninety-five per cent. of the wagon factories (many of them having two, three and even four) ought to verify; its only objection being its lightness.

In our new one we have retained all the good features of the old one, and added some others. This one is very heavy and strong.

All Shafts are much larger and have longer Bearings.

All Pulleys are larger and wider, allowing greater speed, and less strain of belts.

We use a **Travelling Pulley** to drive the **Cutter Head Sub-Shaft**, and furnish a **Floor Stand** for outer end of Main Shaft.

Heads that carry the knives are much stronger. **Gearing** is much heavier.

In fact, we can say, we believe it to be as well built as any machine ever constructed.

It works from either end, and the cutter head travels in either direction. Will turn from thirty to fifty pairs of axles per day.

It will turn a square corner; will cut a round groove; in fact, will follow most any pattern except one having a square gain, or shoulder.

It is of more practical value in a wagon factory than any other one tool, as it can be used to turn axle-trees, bolsters, rockers, sand boards, whiffletrees, spokes, etc.

Will trim 6 feet, 6 inches long, and any required size, from same pattern.

We furnish with each machine two sets of Knives and two pairs of Centers. (one for your ordinary work, the other for small work), Wrenches, and the Endless Belt to drive Cutter Head.

Belt required: 34 feet of 2 inch; 7 feet, 11 inches of 3-inch; 10 feet, 7 inches of 6 inch.

Weight.
3,900

Rev. per Minute.
475 to 525

T. and L. Pulleys.
12 x 7

Fig. 84.

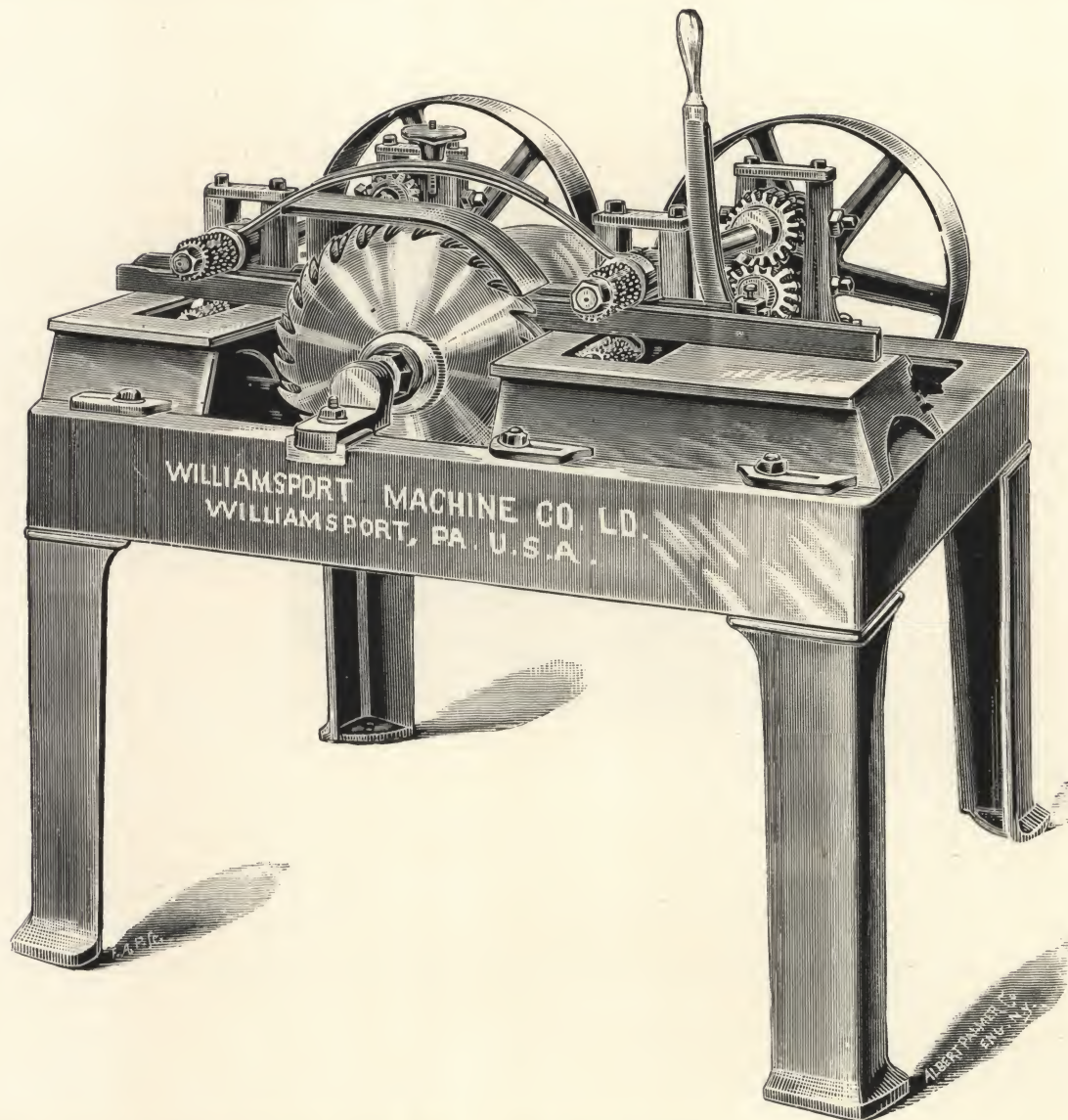
Code Word.
Freshen.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 85.

WILLIAMSPORT MACHINE CO.'S

Improved Lath Mill.



THE cut represents our New Gang Lath Plank Mill. This machine is original in design and has many points of excellence in its various adjustments, strength and quality of material, and good construction. We claim that it cannot be excelled for the purpose intended.

The Machine is provided with adjustments for taking up lost motion.

The Table is so arranged that it can be set closer to the saws as they wear.

The Lever shown in cut is connected with the top feed rolls, by which the operator at any time can raise the upper rolls and withdraw the bolt, if desired, or even stop the feed.

The Saws used on this machine are 14 inches in diameter.

The Arbor, made of steel—very heavy—is provided with end box for taking up end motion; also to steady mandrel at the end where the saw goes on.

The Feed Shafts are four in number, all driven, and the feed rolls are made with sections of small steel spurs, which make a positive feed, and prevent stock or pieces from coming back, and carry out the stock after it leaves the saw. Lath being made on this improved machine, on account of their uniformity in thickness, bring a much better price, and can be manufactured at less cost than from the old style machines. A complete shield covers the saws. This machine is guaranteed to give entire satisfaction. Capacity from 30 to 35 thousand per day. Driving pulley, 8 inches diameter, 8 inches face, should run 2,500 revolutions per minute.

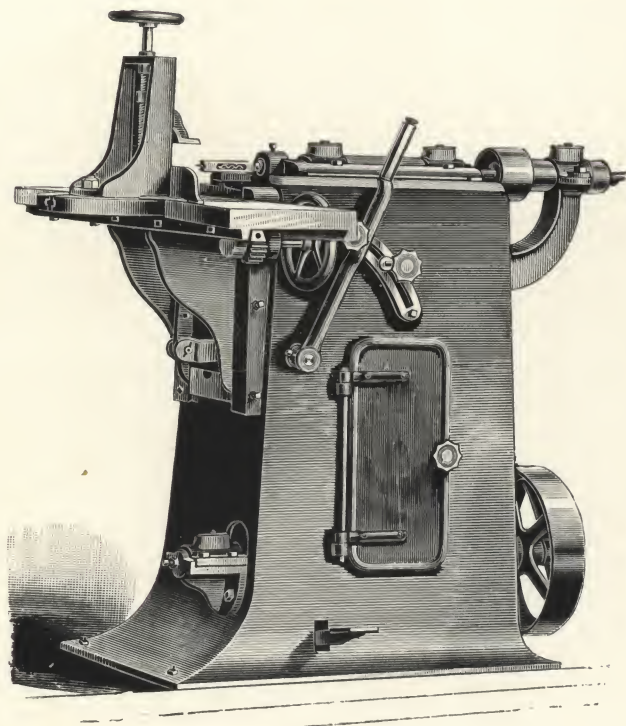
Code Word.
Fretful.

Fig. 85—Improved Lath Mill, complete

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 86.

Automatic Hollow Square Chisel Mortising Machine.



THE above is a cut of our new Automatic Hollow Square Chisel Mortising Machine, which will prove most useful for mortising in Hard Woods; thus rendering it invaluable for car, carriage, wagon, furniture, blind, sash and door factories. The novelty of this machine consists in the peculiar formation of the chisel, which is square, and is fitted with an auger made to revolve inside it.

The End of the Auger projects slightly beyond the edges of the chisel, and when brought up to the timber it bores a round hole.

The Chisel following it, and simultaneously squaring out the four corners and sides, and with no jarring to the machine. A finished mortise of any length, from $\frac{1}{2}$ inch to 1 inch square, and free from chips, is thus made.

The Depths of the Mortise is regulated by the adjustments of the table or the adjustments of the stroke. The movement of the chisel is governed by a treadle placed at the side of the machine, which gives it a continuous reciprocating motion.

The Stroke is variable by changing the position of the crank pin on the reciprocating frame.

The Table is counter-balanced, and is adjusted vertically by a lever provided with stops by which one or more mortises can be made as in double mortising. That is, a $\frac{3}{4}$ inch chisel will make any size mortise from $\frac{3}{4}$ to $1\frac{1}{2}$ inches by passing through twice. It has an adjustment endwise for regulating the length of the mortise by a lever operating a rack and pinion. A $\frac{3}{4}$ chisel and auger is provided with each machine and a full set of wrenches. Other size chisels are extra.

	T. and L. Pulleys.	Rev. per Minute.	Weight.	Code Word.
Fig. 86	10 x 5 in.	900	1,700 lbs.	Friable.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 87.

ROWLEY & HERMANCO CO.'S

Improved New Style No. 2 Power Mortiser.

With Boring Attachment, Clamp Table and
Rack and Pinion Feed.

THIS Machine is principally used on hard wood, and the heavier classes of building material.

It has no superior for furniture, wagon and agricultural implement factories.

The Frame is cast in one solid piece, and extends over the crank shaft, while the caps are placed below, thus the entire strain or jar comes on the frame instead of on the caps of the boxes, as in all other mortisers made. This is a new feature worthy of attention.

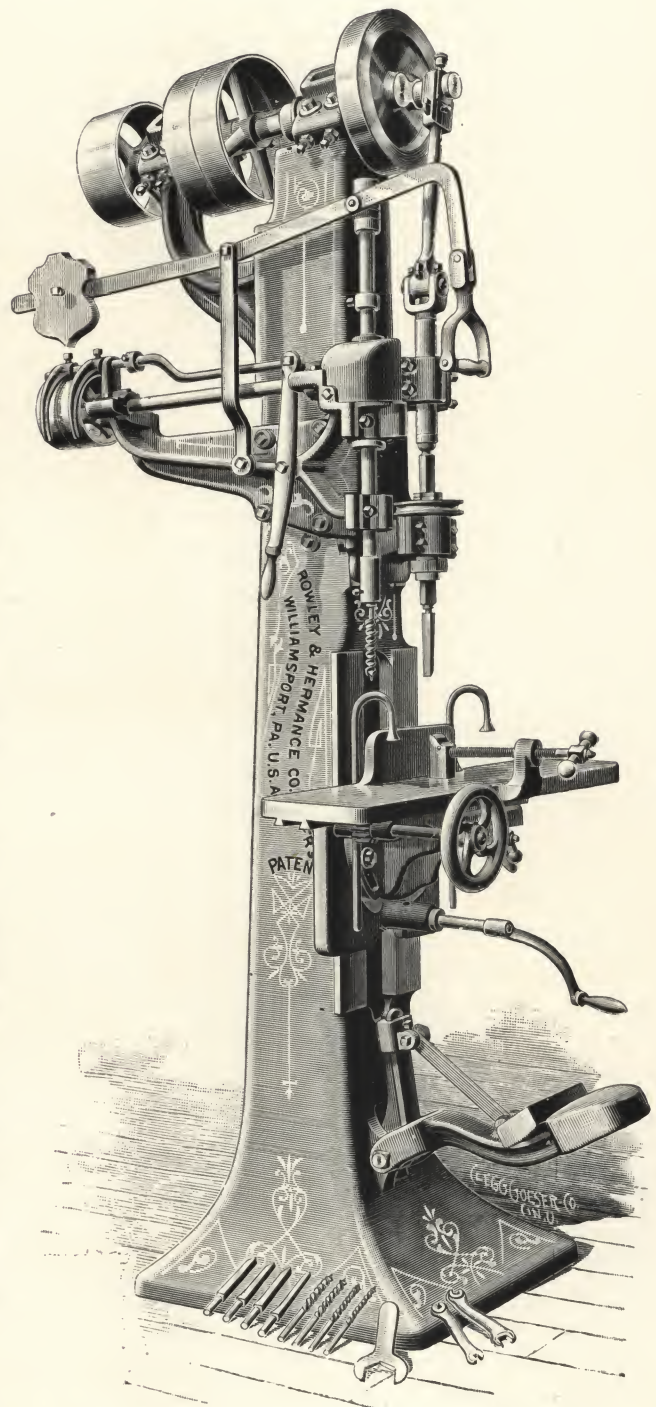
The Clamp Table is simple, durable and effective. The piece to be bored or mortised is clamped and moved forward by the hand wheel which moves the bed, and bored, and then run under the chisel and mortised, without releasing it from its position.

The Table can be tilted to any angle for radial mortising, and will take a piece eight inches wide.

The Boring Attachment is bolted to the side of the frame and driven by gearing. It is provided with a belt shifter for starting or stopping, and can be used or not at will.

It is provided with the **Belt Friction Reverse**, which reverses the chisel instantaneously, whether working or at rest, this reverse is acknowledged to be the best in use.

We furnish with each machine five mortising chisels and five augers, one each of the following sizes: $\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$ and $\frac{3}{4}$ inches.



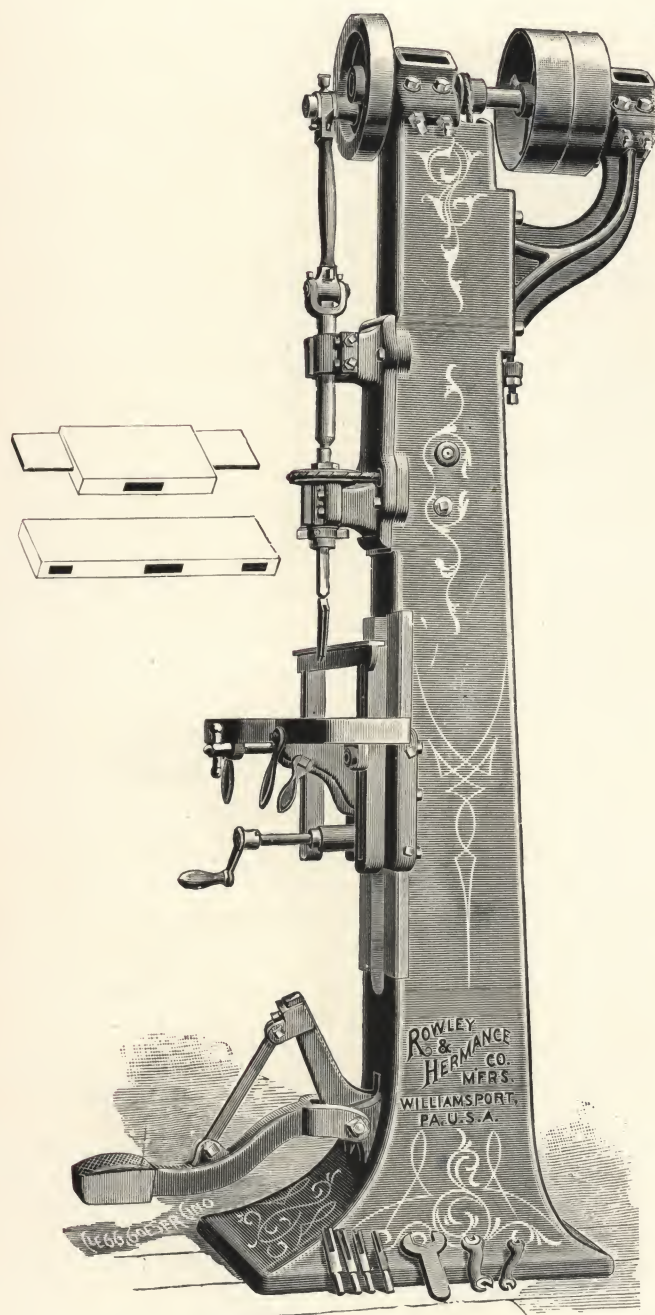
STYLES.	T. and L. Pulleys.	Revs. per Minute.	Cubic Measurements.	Weight.	H. P. Required.	Code Word.
Fig. 87 —No. 2, with Boring Attachment, Clamp Table and Rack and Pinion Feed.....	12 x 3	600	60	1,600	2 to 4	Friar.
Fig. 87 A—No. 2, with Boring Attachment and Plain Table.....	12 x 3	600	57	1,500	2 to 4	Friction.
Fig. 87 B—No. 2, with Clamp Table and Rack and Pinion Feed, without Boring Attach't.	12 x 3	600	57	1,500	1 to 3	Fringe.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 88.

ROWLEY & HERMANCO. CO.'S

Improved New Style No. 2 Power Mortiser.



ANNEXED engraving shows a Power Mortiser for mortising doors, sash, blinds, furniture, etc. The frame is cast in one solid piece, and the machine is constructed in the most substantial manner, and can be run at a higher rate of speed than other machines for doing the same work.

In all other mortising machines the set screws in the cap of the box on crank shaft have to withstand the full effects of the blow of the chisel, thus bringing all the strain upon the caps of the box, causing a great deal of wear and lost motion. In the machine illustrated the **solid iron frame** is extended over crank shaft, and the **patent sliding caps**—shown separately in the small detail view—are placed beneath, and the wear can be taken up by simply setting up the caps. This is an important improvement and will be readily understood.

The outside or **rear bearing** of counter-shaft is a heavy cast iron arm fitted carefully in a planed seat, and by means of a set screw, the back end of shaft may be raised or lowered so as to keep the shaft at right angles with the spindle, and is held rigidly in place by four heavy bolts, which allows the babbitt in the top box to be entirely worn out before re-babbitting.

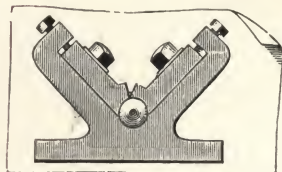
The **side wear** of the quill box is taken up from the side, precisely where the wear occurs. When the crank passes the center the thrust of the pitman is against the side of the box, and our method of taking out the wear on the side is original with us.

The bed drops 12 inches, and can be used for straight mortising in the usual manner, and is capable of being tilted to any angle for radial mortising. It is provided with the belt friction reverse, which reverses the chisel instantaneously, whether working or at rest. This reverse motion is acknowledged to be the best in use.

The **shafts** are all of the best cast steel, and the bearings are made very long. The high rate of speed at which this machine is run permits of doing a large amount of work in a given time.

The several improvements on this mortiser make it the best machine of the kind in the market. We call especial attention to these improvements as shown in the above cut of machine.

Each machine is furnished with five chisels, viz.: $\frac{1}{4}$ inch, $\frac{3}{8}$ inch, $\frac{1}{2}$ inch, $\frac{5}{8}$ inch and $\frac{3}{4}$ inch.



STYLE.

Fig. 88—No. 2, Plain Table, without Boring Attachment,

T. and L. Pulleys.	Revs. per Minute.	Cubic Measure.	Weight.	Average H. P.	Code Word.
12 x 3	600	57	1,400	1 to 3	Friquet.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 89.

ROWLEY & HERMANCE CO.'S

Improved New Style No. 3 Power Mortiser.

FOR mortising sash, blinds, furniture and other light work.

The Solid Iron Frame extends over the crank shaft, and the patent sliding caps are placed beneath; thus the strain is upon the frame of the machine, instead of on the caps of the boxes as in other mortisers.

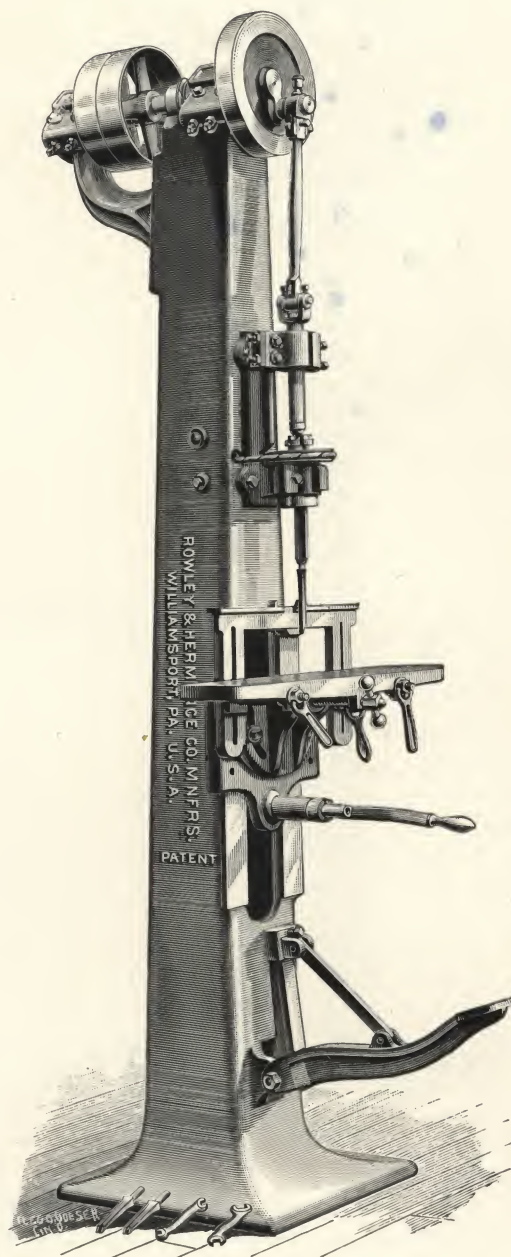
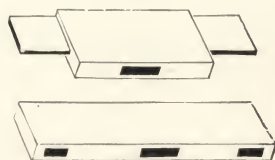
The Box in which the rear end of the crank shaft runs is supported by a heavy arm resting in a planed seat, and may be raised or lowered by means of a set screw, so as to keep the shaft at right angles to the spindle.

The Arm is secured to the frame by four heavy bolts.

The Top Box which carries the quill is divided in the center, and the lost motion occasioned by wear taken up on the sides; for, as all practical men know, as soon as the crank pin passes the center the pitman forces the quill against either side of the box, thus causing the box to wear side-ways, which we fully overcome by this arrangement.

These improvements are very important features, and are not found on any other make of mortiser.

We furnish each machine with three chisels, one each of the following sizes: $\frac{1}{4}$, $\frac{3}{8}$ and $\frac{1}{2}$ inch.



STYLE.	T. and L. Pulleys.	Revs. per Minute.	Cubic Measurement.	Weight.	Average H. P. Required.	Code Word.
Fig. 89—No. 3, with Plain Table, without Boring Attachment.....	10 x 2 $\frac{1}{2}$	750	54	1,000	1 to 2	Frisky.

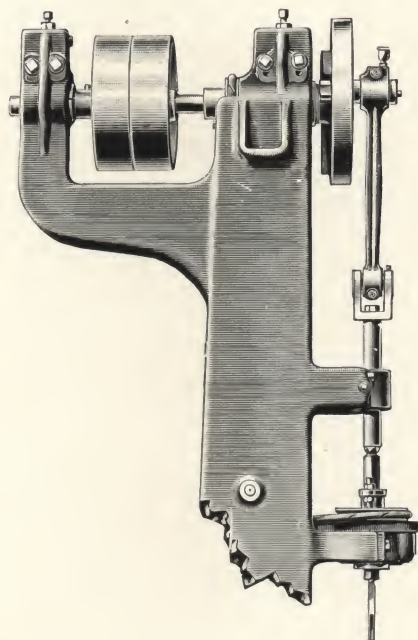
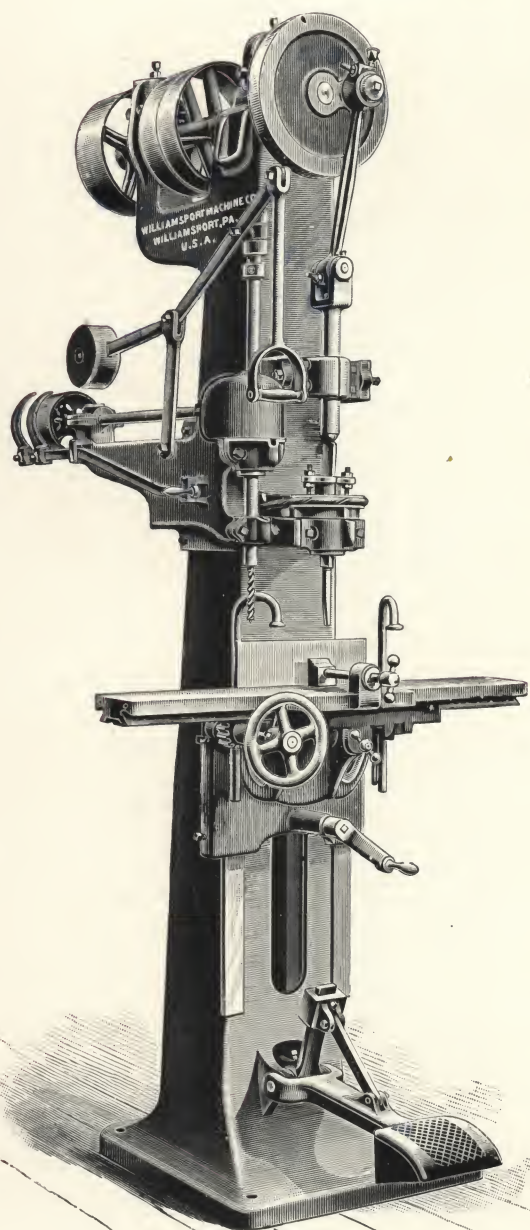
AMERICAN WOOD-WORKING MACHINE CO.

Fig. 90.

WILLIAMSPORT MACHINE CO.'S

No. 2 Latest Improved Power Mortiser.

With Clamp Table, Rack and Pinion Feed and Boring Attachment.



THE accompanying illustrations show the latest improvements in a No. 2 Mortiser for Door, Sash, Blind and Furniture Work. The machine is unusually heavy and the frame being **one solid casting**, facilities for doing heavy work, and durability in every part are thus assured.

Many years of experience of a practical nature have made the manufacturers thoroughly familiar with the requirements of such a machine, and in this Mortiser woodworkers are assured that they have one that is as near perfect as such can be made.

The Frame casting is extended up over the crank shaft as shown in the small cut, and our arrangements of this part of the machine are a special feature to which we call attention. All the jar hitherto thrown on the caps of the boxes falls on the main frame and the wear is taken up by simply adjusting the two screws shown at the top.

The Heavy Arm for the rear bearing to crank shaft is cast solid with the main frame, and not bolted on as on similar machines of other makes. This makes the bearing immovable and the improved boxes provide for taking up the wear in a superior manner.

The New Quill Box is in advance of any of the kind in use, as by its construction the use of liners is avoided, and all lost motion is taken up directly in the line of the wear which always preserves the perfect alignment of the quill. In other makes of machines this wear is taken up in the opposite side of the box to the line of wear, and the quill consequently gets out of line. This is an important advantage.

The bed drops to 15 inches, and all the adjustments are simple, accurate and strong.

The chisel reverse is of a new design and superior to any in use.

The construction of the **Boring Attachment** is very modern and is a complete machine in itself, being provided with belt shifter, and made unusually heavy.

The Shafts are all of steel, bearings unusually long, and the action of this Mortiser is very easy and free from noise or tremor.

We invite comparison in weight, construction and every point of our machine with any No. 2 Mortiser made. We can arrange this machine with or without the Boring Attachment, and with Plain or Clamp Table, as desired. Five Mortising Chisels and five Auger Bits are furnished of the following sizes: $\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$ and $\frac{3}{4}$ inches.

STYLES.	T. and L. Pulleys.	Revs. per Minute.	Cubic Measure.	Weight.	Average H. P.	Code Word.
Fig. 90 —Clamp Table, Rack and Pinion Feed and Boring Attachment...	12 x 3	600	.....	1,600	.....	Frizzle.
Fig. 90 A—Clamp Boring Attachment and Plain Table.....	12 x 3	600	.....	.....	.....	Frolic.
Fig. 90 B—Clamp Table, Rack and Pinion Feed, without Boring Attachment	12 x 3	600	.....	.....	.....	Frontage.

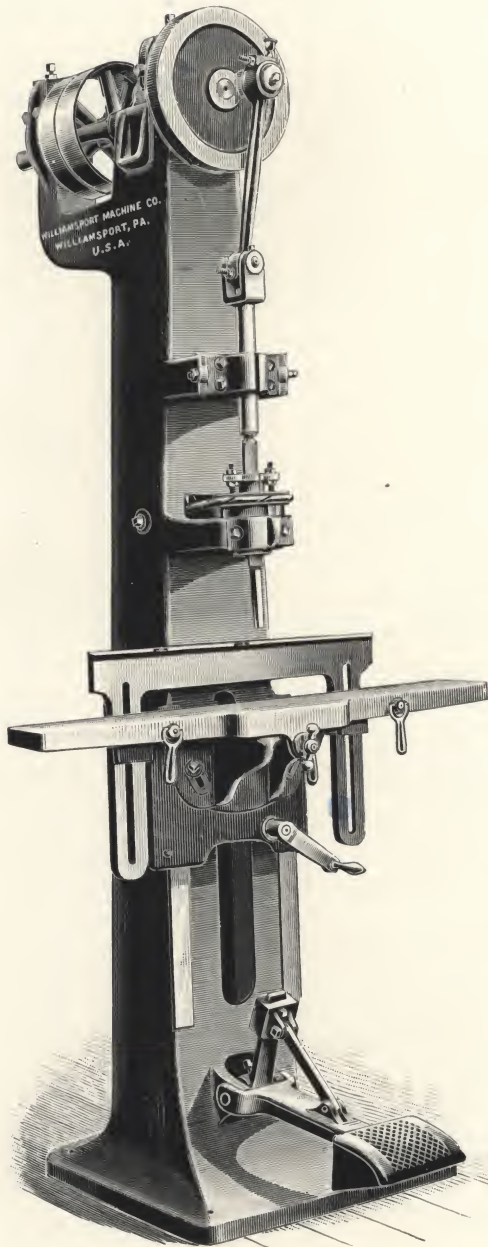
AMERICAN WOOD-WORKING MACHINE CO.

Fig. 91.

WILLIAMSPORT MACHINE CO.'S

No. 2 Latest Improved Power Mortiser.

WITH PLAIN TABLE.



THE accompanying illustrations show the latest improvements in a No. 2 Mortiser for Door, Sash, Blind and Furniture Work.

The machine is unusually heavy and the frame being **one solid casting**, facilities for doing heavy work, and durability in every part are thus assured.

Many years of experience of a practical nature have made the manufacturers thoroughly familiar with the requirements of such a machine, and in this Mortiser woodworkers are assured that they have one that is as near perfect as such can be made.

The **Frame** casting is extended up over the crank shaft as shown in the small cut, and our arrangements of this part of the machine are a special feature to which we call attention. All the jar hitherto thrown on the caps of the boxes falls on the main frame and the wear is taken up by simply adjusting the screws shown at the top.

The **Heavy Arm** for the rear bearing to crank shaft is cast solid with the main frame, and not bolted on as on similar machines of other makes. This makes the bearing immovable and the improved boxes provide for taking up the wear in a superior manner.

The **New Quill Box** is in advance of any of the kind in use, as by its construction the use of liners is avoided and all lost motion is taken up directly in the line of the wear which always preserves the perfect alignment of the quill. In other makes of machines this wear is taken up in the opposite side of the box to the line of wear, and the quill consequently gets out of line. This is an important advantage.

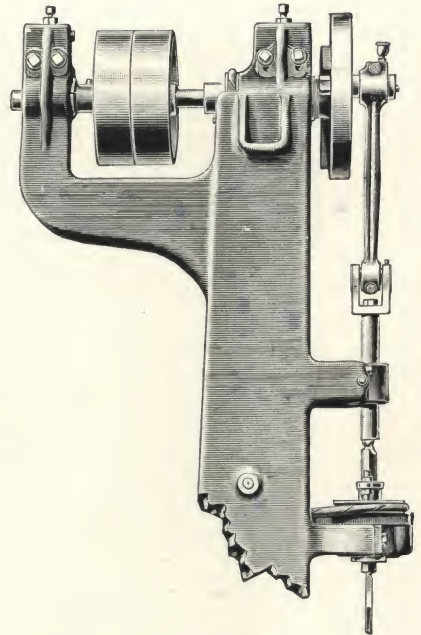
The bed drops to fifteen inches and all the adjustments are simple, accurate and strong. The chisel reverse is of a new design and superior to any in use.

The **Shafts** are all of steel, bearings unusually long and the action of this Mortiser is very easy and free from noise or tremor.

We invite comparison in weight, construction and every point of our machine with any No. 2 Mortiser made.

Five Mortising Chisels are furnished of the following sizes: $\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$, and $\frac{3}{4}$ inches.

STYLE.	T. & L. Pulleys.	Revs. Per Minute.	Cubic Measure.	Weight.	Average. H. P.	Code Word.
Fig. 91—With plain table, without boring attachment....	12 x 3	600	57	1,400	1 to 3	Frontier.

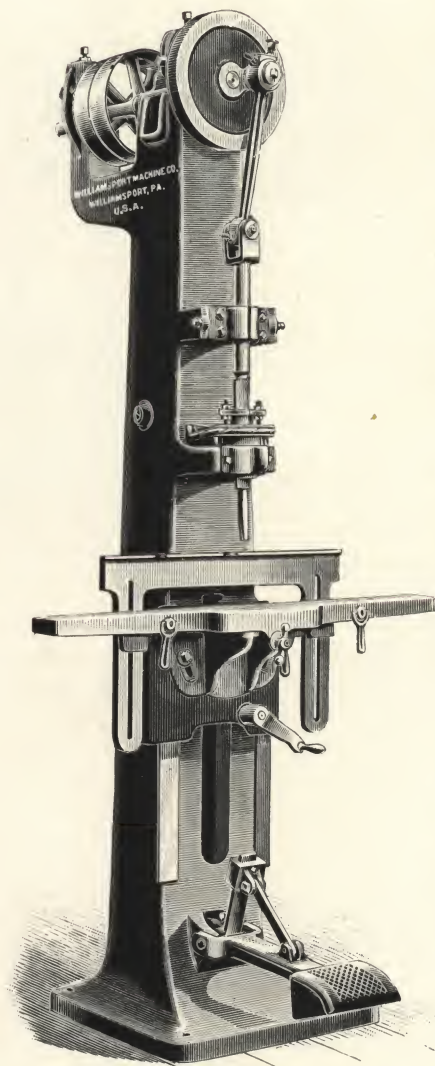


AMERICAN WOOD-WORKING MACHINE CO.

Fig. 92.

WILLIAMSPORT MACHINE CO.'S

No. 3 Latest Improved Power Mortiser.



THE cut herewith shows a new No. 3 Mortiser for sash and blind work and all kinds of light mortising.

This machine is of unusual weight for a machine of the kind and with the new improvements embodied in its construction it makes a machine that for perfect work in large quantities, and durability at every point, cannot be surpassed.

Many years of experience of a practical nature have made the manufacturers thoroughly familiar with the requirements of such a machine, and in this Mortiser wood-workers are assured that they have one that is as near perfect as such can be made.

The Frame Casting is extended up over the crank shaft as shown in the small cut, and our arrangements of this part of the machine are a special feature to which we call attention. All the jar hitherto thrown on the caps of the boxes falls on the main frame, and the wear is taken up by simply adjusting the two screws shown at the top.

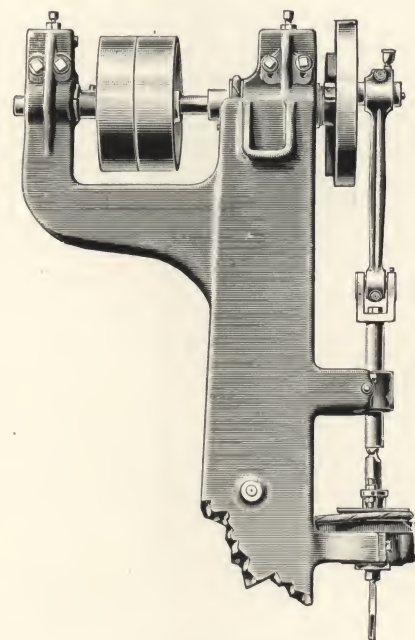
The Heavy Arm for the rear bearing to crank shaft is cast solid with the main frame, and not bolted on as on similar machines of other makes. This makes the bearing immovable and the improved boxes provide for taking up the wear in a superior manner.

The New Quill Box is in advance of any of the kind in use, as by its construction the use of liners is avoided and all lost motion is taken up directly in the line of wear, which always preserves the perfect alignment of the quill. In other makes of machines this wear is taken up in the opposite side of the box to the line of wear, and the quill consequently gets out of line. This is an important advantage.

The Bed drops to 15 inches, and all the adjustments are simple, accurate and strong. The chisel reverse is of a new design and superior to any in use.

The Shafts are all of steel, bearings unusually long, and the action of this Mortiser free from noise or tremor. We invite comparison with any similar machine made.

Five mortising chisels of the following sizes are furnished with each machine: $\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$ and $\frac{3}{4}$ inch.



STYLE.	T. and L. Pulleys.	Revs. per Minute.	Cubic Measure.	Weight.	Average H. P.	Code Word.
Fig. 92—Plain Table, without Boring Attachment,	10 x 3	600	54	1,000	1 to 2	Frugal.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 93.

LEVI HOUSTON CO.'S

New Heavy No. 1 Power Mortiser.

With Boring Attachment, Clamp Table,
Rack and Pinion Feed.

THIS cut shows our latest improved heavy Mortiser with **solid steel crank shaft and outside bearing**, perfectly balanced and the most smooth running mortiser in the market. It is designed to do heavy hard-wood mortising, such as hardwood doors, cabinet, furniture and wagon work, as well as lighter work.

The connection, spindle, straps and reverse are all of **the best steel**, with extra heavy stops on the reverse to prevent danger of breaking off.

The Reversing Device is simple, positive and not liable to get out of order.

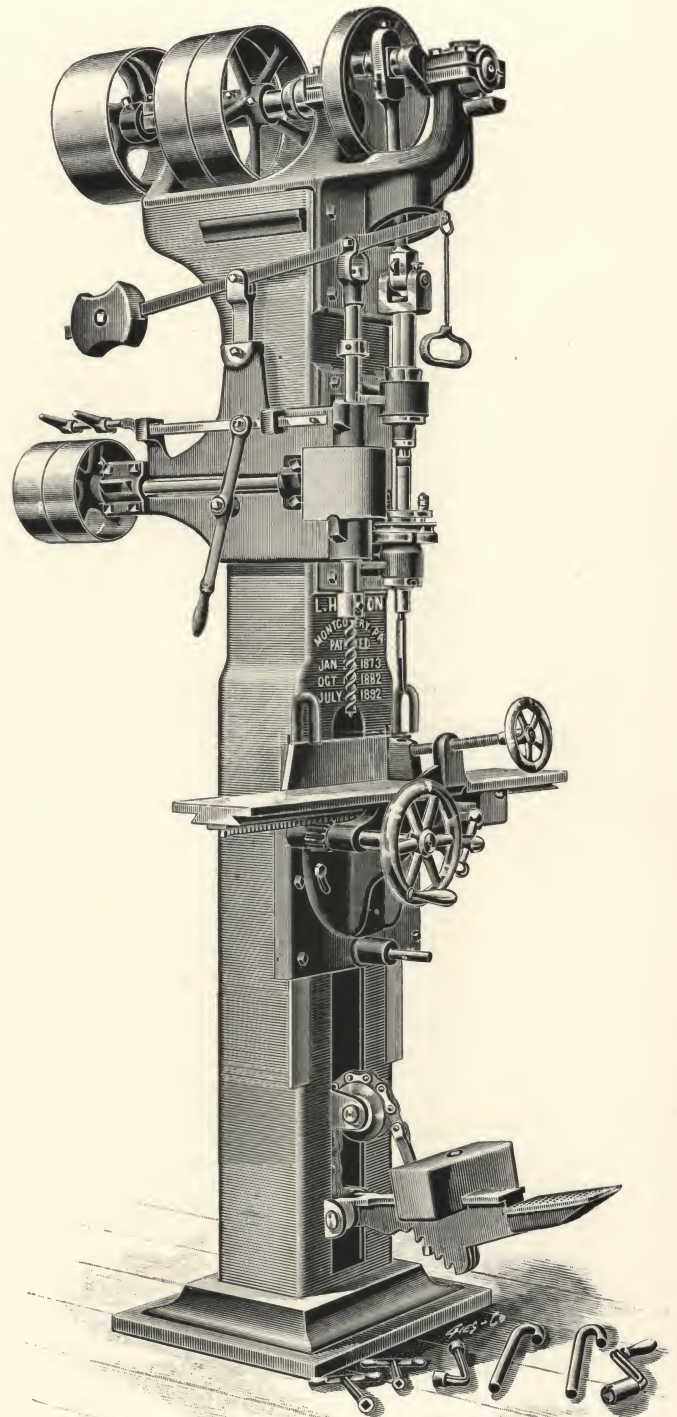
The Conical Split Brass Boxes in which the quill and spindle run, and the method by which the speed of the reverse is reduced, to prevent the battering and breaking of stops, are features not found perfected on any other mortising machine. These conical brass boxes are split and fitted into **conical bearings**. The larger or quill brass is threaded on lower end with nut to take up wear, and the smaller or spindle brass is provided with clamp or jam nuts to take up the wear. The reverse is also conical with nut on small end to take up wear. From this it will at once be seen that it is **impossible for the spindle to be thrown out of line**. The nuisance of re-babbiting is thus avoided, and this machine will run years without requiring any repairs. It will mortise to the center of material 5 inches wide with clamp table, and with plain table to the center of material 6 inches wide.

The Table Tilts to an angle, is provided with clamping device, substantial hold-downs and rack and pinion feed.

The Treadle Device, which relieves the operator from the usual jar experienced in other machines, is acknowledged to be an important improvement, and saves time in adjustment. These features are fully covered by letters patent.

The machine has a substantial base, convenient **belt shifter** for boring attachment, and is in every way first-class.

Five chisels: 3-8, 7-16, 1-2, 5-8 and 3-4, and five boring bits are furnished with each machine, together with full set of wrenches.



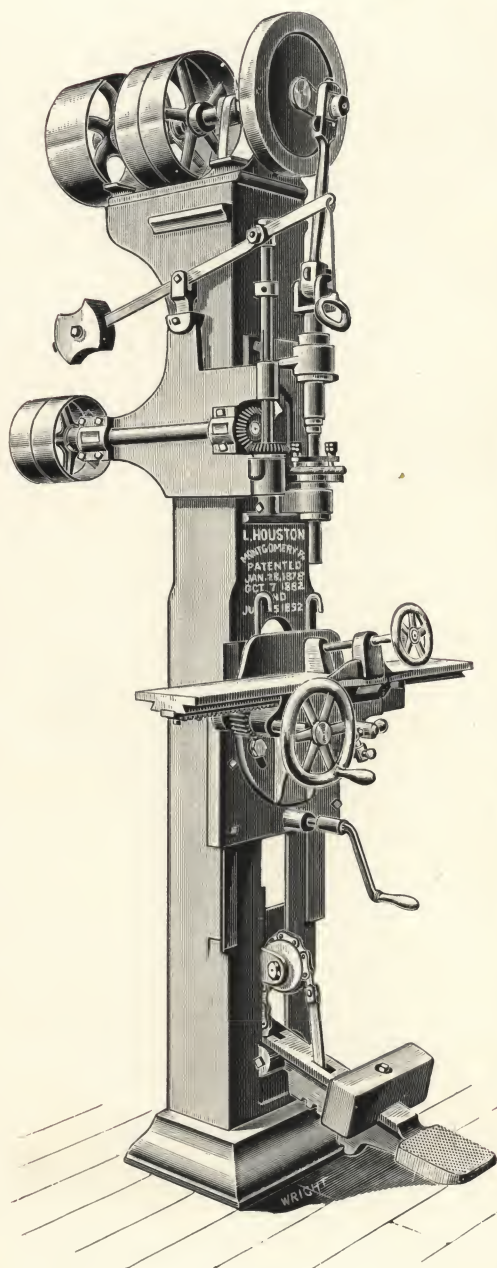
STYLE.	Speed.	T. and L. Pulleys.	Weight.	Code Word.
Fig. 93 —With Clamp Table and Boring Attachment.....	550	12 x 3	1,600	Fruitage.
Fig. 93 A—With Plain “ “ “ “.....	550	12 x 3	1,600	Fruitless.
Fig. 93 B—With Plain Table	550	12 x 3	1,600	Frump.
Fig. 93 C—With Clamp Table	550	12 x 3	1,600	Fucated.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 94.

LEVI HOUSTON CO.'S

Improved No. 2 Mortiser and Borer.



THE engraving represents our No. 2 Mortiser, with a boring attachment and a clamp, pinion feed and swing table.

When arranged in this way this machine is calculated to do heavy hard wood mortising, as well as lighter work.

As it is a well-built, substantial machine, the connection, spindle, straps and reverse are made of steel, with extra heavy stops on the reverse, so there is no danger of the same breaking off.

The Reversing Arrangement is simple, positive and not liable to get out of order.

What we claim as our improvements are the conical split brass boxes in which the quill and spindle run, and the mode by which the speed of the reverse is reduced to prevent the battering and the breaking of the stops on the reverse, which operators know has heretofore been a bad feature on all mortising machines.

Our Conical Brass Boxes are split and fitted into conical bearings. The larger or quill brass has a thread cut on the lower end, with a nut on to take up the wear, and the smaller or spindle brass is held with clamp or jam nuts to take up the wear in it. The reverse is also conical, with nut on the small end for taking up the wear on same. Any mechanic will see at once that it is impossible for the spindle to be thrown out of line.

There is no re-babbitting needed on this machine. It will run for years without requiring repairs.

All these machines are built with tilting table, so as to be set on an angle.

These conical split boxes and pulley for reducing the speed of the reverse are patented by us, and we hereby warn all parties against infringing, or buying infringed machines.

There are a large number of these machines in use throughout the country, and they are acknowledged to be the best.

Five chisels go with this machine—3-8 inch, 7-16 inch, 1-2 inch, 5-8 inch, and 3-4 inch, unless otherwise ordered.

The Treadle on this machine is arranged with a chain over an idle pulley to raise and lower the table, and relieves the operator from any jar. It is also very quickly adjusted by changing the T in the chain from one slot to another beneath the treadle. This is done in an instant—no bolts or screws need to be loosened, as in the old style treadle.

STYLES	Speed.	T. & L. Pulleys.	Weight.	Code Word.
Fig. 94 —With Clamp Table and Boring Attachment.....	550	12 x 3	1,200	Fuddled.
Fig. 94 A—With Plain Table and Boring Attachment.....	550	12 x 3	1,200	Fudging.
Fig. 94 B—With Clamp Table	550	12 x 3	1,200	Fugitive.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 95.

LEVI HOUSTON CO.'S

Improved No. 2 Mortiser.

THE engraving appended represents our No. 2 Power Mortiser. It is used principally for door work, but is capable of doing heavier or lighter work. It is a well built, substantial machine. The connection, spindle, straps and reverse are made of steel, with extra heavy stops on the reverse, so there is no danger of the same breaking off.

The Reversing Arrangement is simple, positive and not liable to get out of order.

What we claim as our improvements are the conical split brass boxes in which the quill and spindle run, and the mode by which the speed of the reverse is reduced to prevent the battering and breaking of the stops on the reverses, which operators know has heretofore been a bad feature on all mortising machines.

Our Conical Brass Boxes are split and fitted into conical bearings. The larger or quill brass has a thread cut on the lower end, with a nut on to take up the wear, and the smaller or spindle brass is held with clamp and jam nuts to take up the wear in it. The reverse is also conical, with nut on the small end for taking up the wear on same. Any mechanic will see at once that it is impossible for the spindle to be thrown out of line.

There is no re-babbitting needed on this machine. It will run for years without requiring repairs.

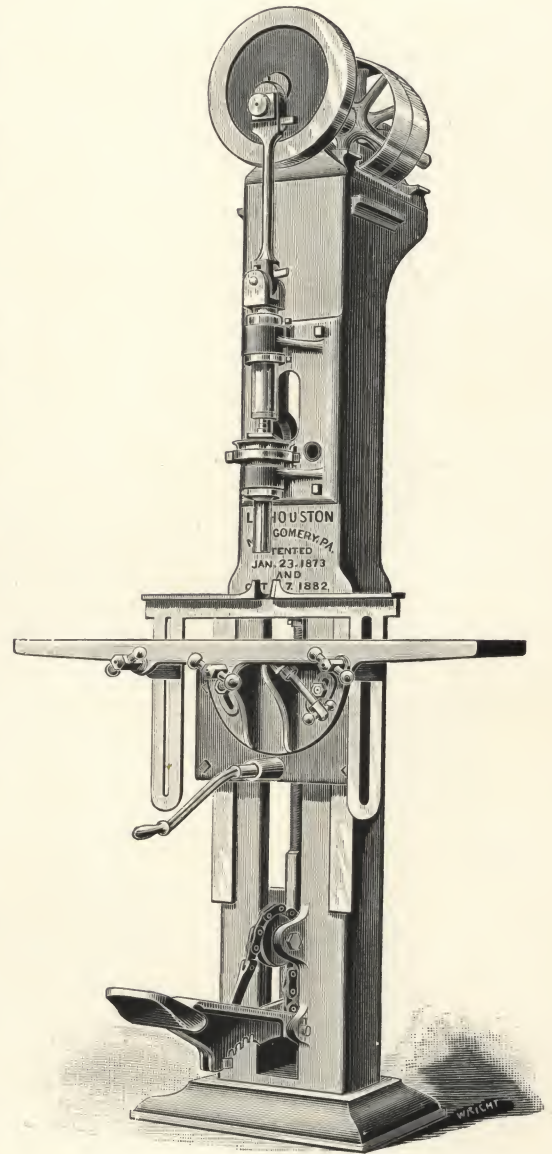
All these machines are built with tilting table, so as to be set on an angle.

These conical split boxes and pulley for reducing the speed of the reverse are patented by us, and we hereby warn all parties against infringing or buying infringed machines.

The Treadle on this machine is arranged with a chain over an idle pulley to raise and lower the table, and relieves operator from any jar. It is also very quickly adjusted by changing the T in the chain from one slot to another beneath the treadle. This is done in an instant, no bolts or screws need to be loosened, as in the old style treadle.

There are a large number of these machines in use throughout the country, and they are acknowledged to be the best.

Five chisels go with this machine—3-8 inch, 7-16 inch, 1-2 inch, 5-8 inch and 3-4 inch, unless otherwise ordered.



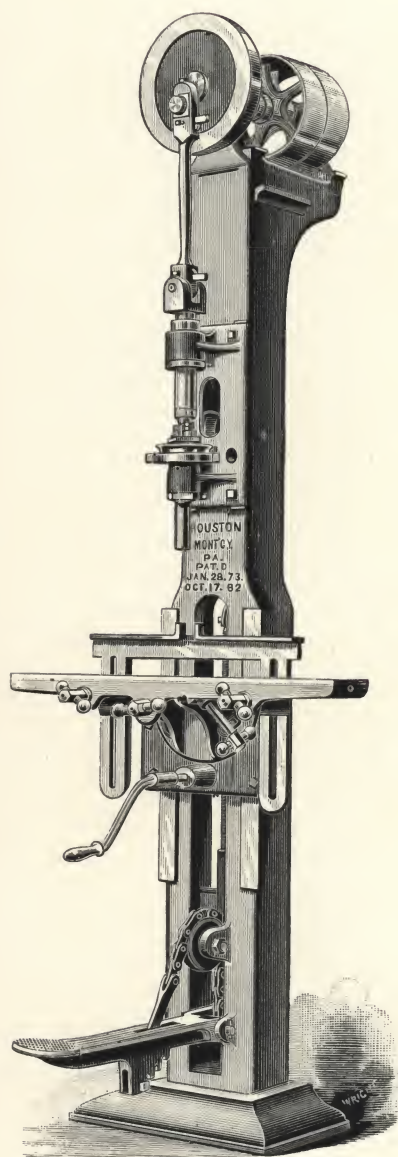
STYLE.	Speed.	T. and L. Pulleys.	Weight.	Code Word.
Fig. 95—No. 2 Mortiser.....	550	12 x 3	1,000	Fugle.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 96.

LEVI HOUSTON CO.'S

Improved No. 3 Mortiser.



THE engraving represents our No. 3 or Sash Mortiser. It is used principally on sash and blind work, but is capable of doing all kinds of light mortising.

As it is a well-built, substantial machine, the connection, spindle, straps and reverse are made of steel, with extra heavy stops on the reverse, so there is no danger of the same breaking off. The **reversing arrangement** is simple, positive and not liable to get out of order.

What we claim as our improvements are the conical brass boxes in which the quill and spindle run, and the mode by which the speed of the reverse is reduced to prevent the breakage of the stops on the reverse, which operators know has heretofore been a bad feature on all mortising machines.

Our **Conical Brass Boxes** are split and fitted into conical bearings. The larger or quill brass has a thread cut on the lower end, with a nut on to take up the wear of the brass, and the smaller or spindle brass is held with clamp and jam nuts to take up the wear in it. The reverse is also conical, with nut on the small end for taking up the wear on same. Any mechanic will see at once that it is **impossible for the spindle to be thrown out of line.**

There is no re-babbitting needed on this machine. It will run for years without requiring repairs.

All these machines are built with **tilting table**, so as to be set on an angle.

These conical split boxes and pulley for reducing the speed of the reverse are patented by us, and we hereby warn all parties against infringing or buying infringed machines.

The **Treadle** on this machine is arranged with a chain over an idle pulley to raise and lower the table, and relieves the operator from any jar. It is also very quickly adjusted by changing the **T** in the chain from one slot to another beneath the treadle. This is done in an instant—no bolt or screws need to be loosened, as in the old-style treadle.

There are a large number of these machines in use throughout the country, and they are acknowledged to be the best.

Five chisels go with this machine—1-4 inch, 5-16 inch, 3-8 inch, 7-16 inch and 1-2 inch, unless otherwise ordered.

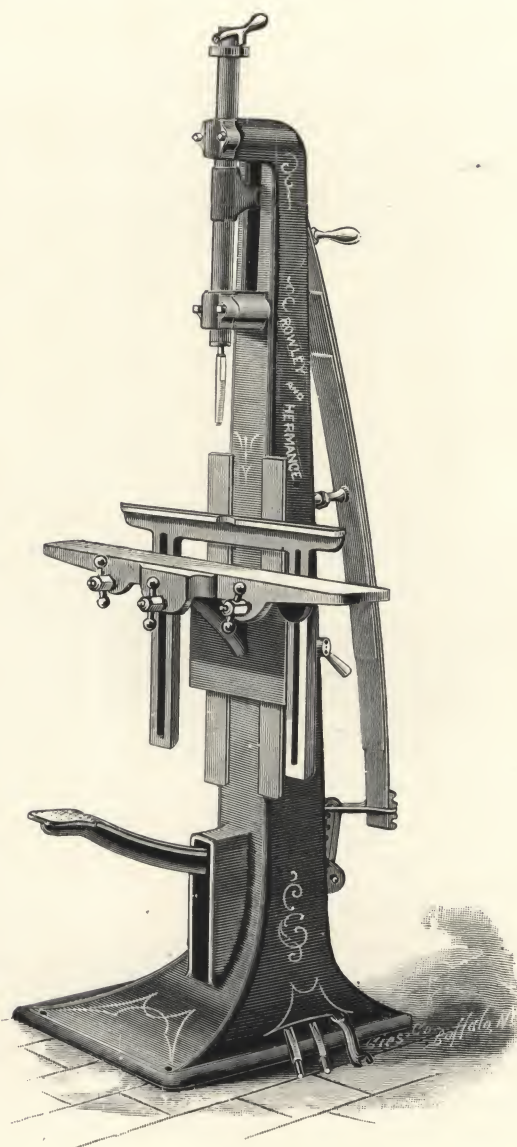
STYLE.	Speed.	T. & L. Pulleys.	Weight.	Code Word.
Fig. 96—No. 3 Mortiser	600	10 x 3	750	Fulfil.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 97.

ROWLEY & HERMANCE CO.'S

Heavy Iron Frame Foot Mortiser.



THIS is the heaviest Foot Mortiser in market for the price, and we believe it to be the best one made.

The Table is adjustable, up and down and out and in.

The Guides are adjustable up and down. The springs are made with four leaves of the best spring steel.

The Spindle is steel.

The Reverse is quick and accurate. There are cheaper machines than this, but we know of none equal to it.

It is furnished with three chisels, viz.: $\frac{1}{4}$ -inch, $\frac{3}{8}$ -inch, and $\frac{1}{2}$ -inch.

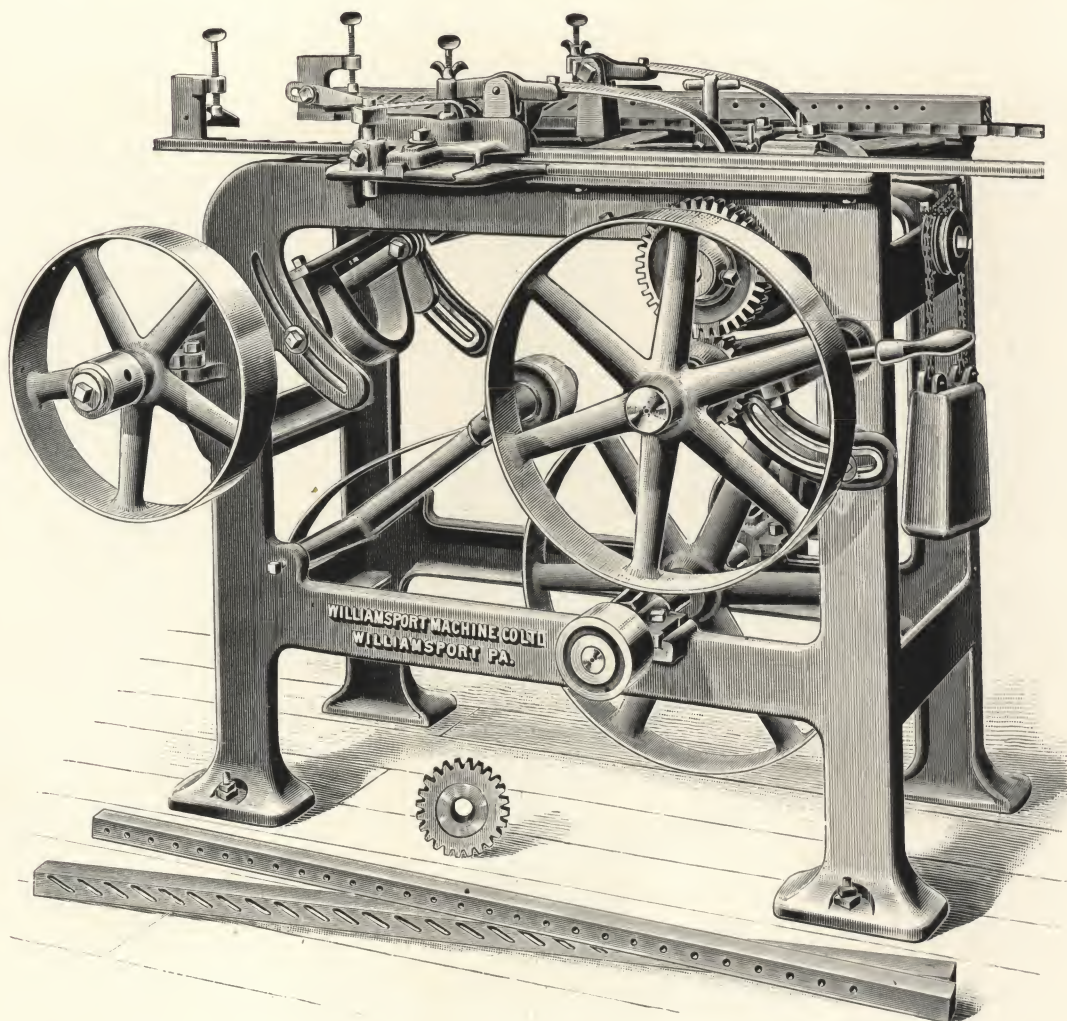
	Cubic Measure.	Weight.	H. P. Required.	Code Word.
Fig. 97—Foot Mortiser.....	32	500	Nominal.	Fulgent.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 98.

WILLIAMSPORT MACHINE CO.'S

New Blind Stile Boring and Mortising Machine.



WE have just placed on the market a new Blind Stile Boring and Mortising Machine of which the above cut is an excellent illustration. We claim for this machine that it is far ahead of anything yet produced for boring stiles, for rolling slats and mortising for stationary ones.

The Frame is Cast in One Solid Piece, and not bolted together as in other machines, thus affording the greater amount of strength and solidity. By the use of an open Cam operated by a steel roller and weight, as shown in the cut, all lost motion, caused by the wearing of the Cam in other machines, is entirely avoided and every hole is therefore bored to exactly the same depth.

The Tightener pulley is fitted with a spring which keeps the belt perfectly tight when mortising for stationary slats. By simply loosening a nut the **large clutch pulley** can be dropped out of the way of the feed gear, which can then be taken off and replaced with the small gear shown in the cut which will **increase the speed one-third**, thus adding largely to the capacity of the machine, when boring for pivot slats.

Every movement of this machine is positively accurate, as regards spacing, boring and mortising, and covers every range of work that can possibly be done on any other machine of the kind, at the same time doing it much faster and better. We claim that it will mortise far more slats in a given time than any other machine on the market, and is so arranged that it will bore much faster than it will mortise.

We desire to call the special attention of car builders to this machine, as it is practically adapted to fine passenger car work, for this purpose it is far superior to any machine yet produced.

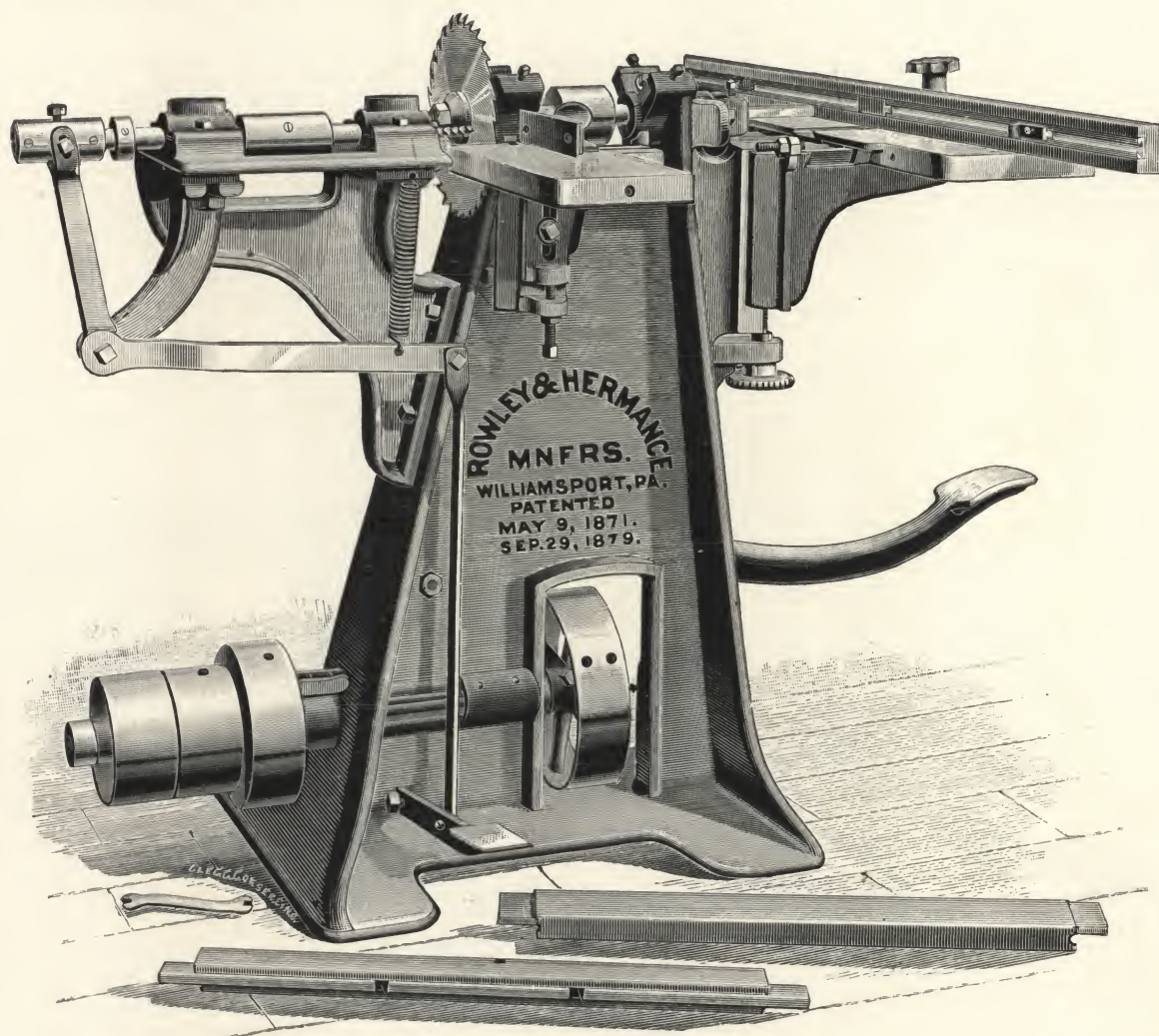
	T. and L. Pulleys.	Rev. per Minute.	Approximate Weight.	Code Word.
Fig. 98—Blind Stile Boring and Mortising Machine.....	8 x 3	800	700	Fullage.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 99.

ROWLEY & HERMANCE CO.'S

No. 1 Sash Mortiser, with Relishing Attachment.



ABOVE Machine is intended for making the mortise for the bars in the meeting rail and top and bottom rails of sash. The work is performed by a **stationary hollow chisel** with an auger bit revolving inside.

This Chisel and bit mortise a square hole, cleaning the chips out of mortice as perfectly as a common boring bit.

The Sash Rails are placed on the table, the tenons against stops, which are adjustable to any length of rail. The table is then moved towards the chisel by the foot treadle, up to the stops which govern the depth of mortise. Suitable springs force the table back after the mortise is made.

The Table is adjustable up and down for different thicknesses of sash. Different sizes of chisels can be used. For example, $\frac{1}{2}$ -inch by $\frac{1}{2}$, or $\frac{1}{2}$ -inch by $\frac{3}{8}$, or $\frac{3}{8}$ -inch by $\frac{1}{16}$, etc., etc.

The Sash Relishing Attachment consists of a table and rip-saw on opposite end of the arbor from the Mortiser; also a boring arbor and bit.

The Table has an adjustable guide for regulating the width of relish; also an adjustable stop for the shoulder of the tenon.

The Relish is made by feeding the rail up to the stop and completing the relish with the bit, which is operated by a foot treadle. This work can be done very rapidly by a boy.

We sell the machine either as a Sash Mortiser, or same with Relishing Attachment. We furnish one $\frac{1}{2}$ -inch by $\frac{7}{16}$ -inch hollow chisel and bit with Sash Mortiser; or when sold as a Mortiser and Relisher, one $\frac{1}{2}$ -inch by $\frac{7}{16}$ -inch hollow chisel and bit, one 10-inch rip saw, one $\frac{3}{8}$ and one $\frac{5}{8}$ bit, and two wrenches.

We warrant machine to give satisfaction.

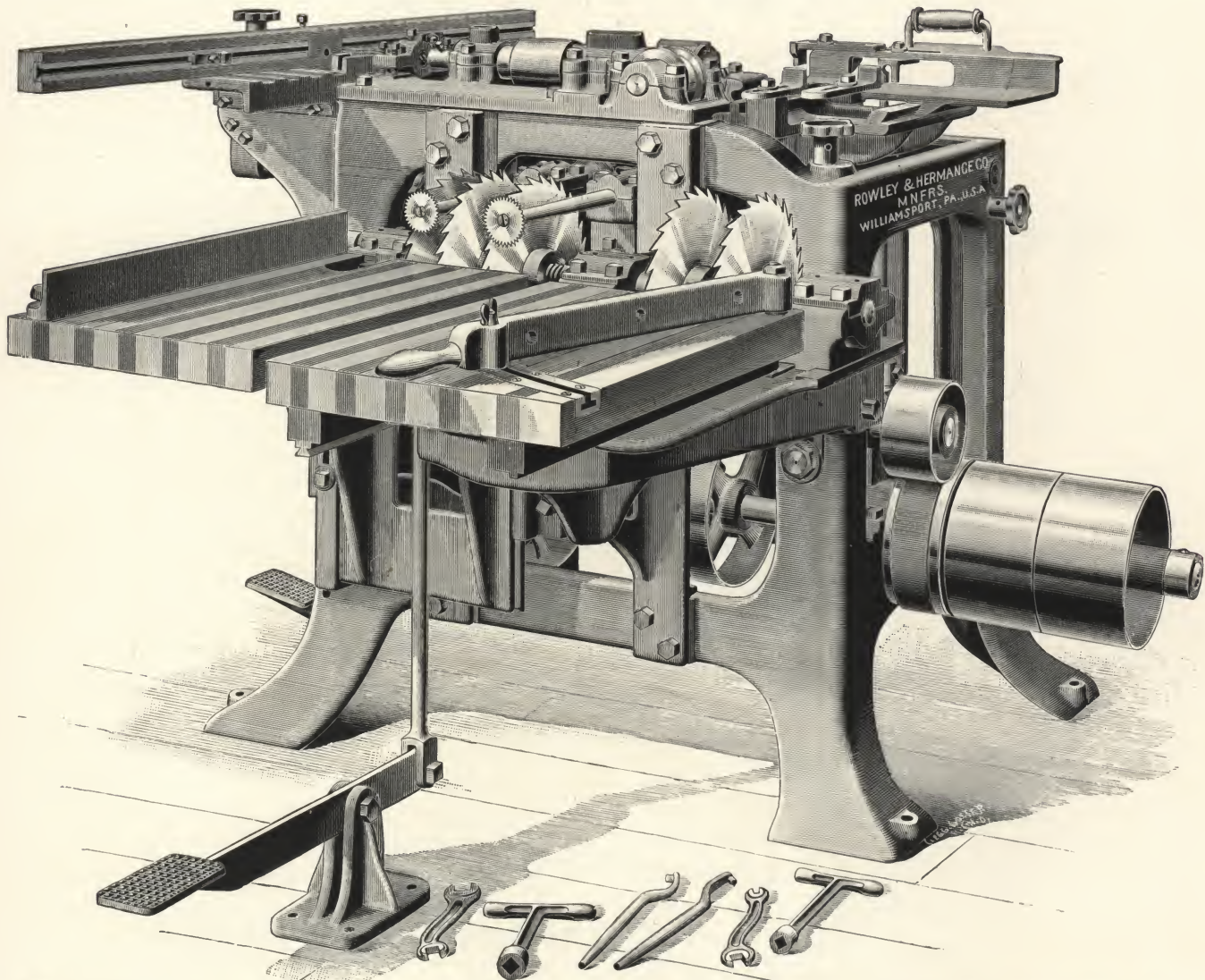
STYLE.	T. & L. Pulleys.	Revs. Per Minute.	Approximate Weight.	H. P. Required.	Code Word.
Fig. 99 —Sash Mortiser only, with Square Hollow Chisel	6 x 3	900	.....	.....	Fuller.
Fig. 99 A—Sash Mortiser, including Relishing Attachment..	6 x 3	900	700	1	Fulmar.

Fig. 100.

ROWLEY & HERMANCO CO.'S

No. 2 Door, Sash and Blind Relishing and Mortising Machine.

With Wedge-Cutting and Blind Rail Routing Attachment.



WE take pleasure in recommending to the trade this most valuable labor-saving machine for relishing doors, sash and blind rails, mortising sash rails, stiles and bars, and recessing the blind rail for the end of the blind rods. It embodies improvements not found on any other machine.

The Frame is very heavy and cast in one piece, with the attachments substantially fitted to it, and so designed that the various kinds of work performed on this machine can be done without interference with each other.

The Mortising is performed with an oblong hollow chisel and an auger bit revolving inside, which cleans the chips out of mortise perfectly in the same operation. The depth of mortise is regulated by adjustable stops.

The Table upon which the work is placed moves forward to the hollow chisel, either by foot-power or automatic power feed as ordered. With the automatic power feed the mortising is done much quicker and with greater ease to the operator. The gauge is provided with adjustable stops, and once set, no laying-out on the work is required.

The Relishing of the door rails and cutting the wedges is performed by saws, as shown in cut, by one handling. The table has a vertical adjustment by means of a foot-treadle, and is provided with adjustable stops to regulate the depth of the relish.

The Relishing of sash and blinds is performed at the rear of machine (without interference, either with the sash mortising or door relishing,) and is provided with all the attachments, including adjustable stops, gauges, boring bit and cutter-head for completing the relish.

The recess for the blind rod is routed at the same time the blind rail is relished, and is performed by a vertical spindle and router cutter.

This machine can be furnished as follows: As a Sash Mortiser only; Sash and Blind Mortiser and Relisher; Sash and Blind Mortiser and Relisher with Blind Rail Routing attachment; or the Complete Machine, including Door Rail Relishing and Wedge-Cutting Attachment, with or without Power Feed for Mortiser, as ordered.

The machine complete is furnished with one oblong hollow chisel and bit, relishing head, relishing bit, routing cutter, one set of (5) saws for relishing doors, and two saws for cutting out the wedges, with the Mortiser a gauge with adjustable stops.

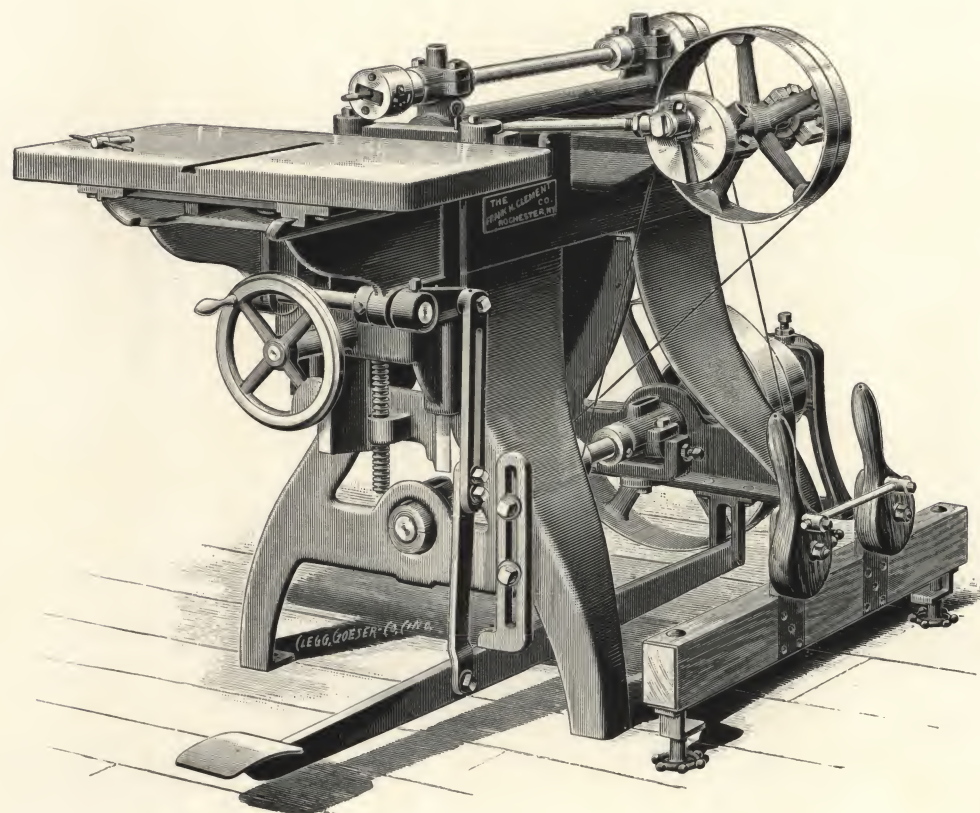
	Tight and Loose Pulleys.	Revs. per Minute.	Cubic Measure.	Approximate Weight.	Average H. P. Required.	Code Word.
Fig. 100 —No. 2 Door, Sash and Blind Relishing and Mortising Machine, complete with all the attachments and with foot power and feed on the Mortiser	8 x 4½	1,000	76	1,500	2 to 3	Fulvid.
Fig. 100 A—Extra for Power Feed on Mortiser	8 x 4½	1,000	76	1,300	2 to 3	Fumble.
Fig. 100 B—No. 2, as a Sash and Blind Relishing and Mortising Machine with Blind Rail Router only and Foot Power Feed on Mortiser	8 x 4½	1,000	76	1,300	2 to 3	Fuming.
Fig. 100 C—Extra, for Door Relishing Attachment	8 x 4½	1,000	76	1,300	2 to 3	Function.
Fig. 100 D—Extra, for Wedge Cutting Attachment	8 x 4½	1,000	76	1,300	2 to 3	Funded.
Fig. 100 E—No. 2, as a Sash and Blind Relishing and Mortising Machine, without Blind Rail Routing Attachment, with Foot Power Feed on Mortiser	8 x 4½	1,000	76	1,200	2 to 3	Funeral.
Fig. 100 F—No. 2, as a Sash Mortiser (only) with Foot Power Feed	8 x 4½	1,000	76	1,100	2 to 3	Fungus.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 101.

F. H. CLEMENT CO.'S

No. 1 Bit Mortising and Boring Machine.



THIS is a finely designed, substantial, well made tool, adapted to Furniture, Chair, Car, Agricultural and General Shops where boring and mortising are required.

The Main Spindle is of steel and is supplied with a self-centering chuck with hardened jaws, with capacity to receive any bit shank up to $\frac{3}{4}$ in. diameter.

The Table has a horizontal movement toward the bit of 6 inches, and a vertical movement of 9 inches by hand wheel and screw, both sets of ways being provided with nicely fitted take-up gibbs. There is a stop-gauge under the table for limiting the depth of the cutting.

Adjustable Screw Clamps, or the eccentric clamps shown in the cut are furnished with the machine, and they are detachable so that any special jig or clamp can be attached.

Mortises from $\frac{3}{8}$ to $6\frac{1}{2}$ inches long and from $\frac{1}{8}$ to 1 inch wide can be cut in any kind of wood.

The Crank Shaft is boxed solidly on arms projecting from the bed of the machine, the latter being cast in one piece so that none of the parts can get out of line. The center of vibration of the main spindle is directly under the center of the pulley.

The Foot Lever attachment for working the table is a great convenience and saves much time, as it leaves both the operator's hands free to handle the work. All the fitting is excellent and the wearing surfaces are larger, and weight of all the parts much greater than in machines of other makers.

Our New Self-Oiling loose pulley and a floor hanger for the outer end of the counter shaft, are furnished,

Multiple Bit Mortiser.

We manufacture also a heavy all iron and steel Multi-Spindle Mortiser for chair and other work, with two, three or four vibrating spindles, each independently adjustable for distance and stroke, complete with counter-shaft on frame.

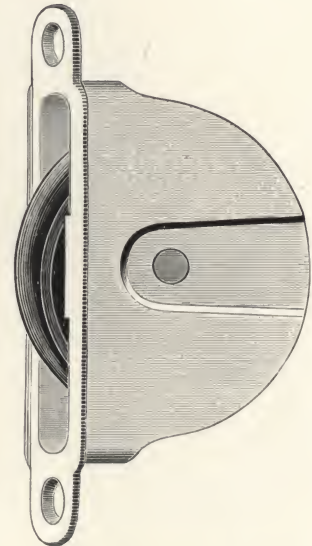
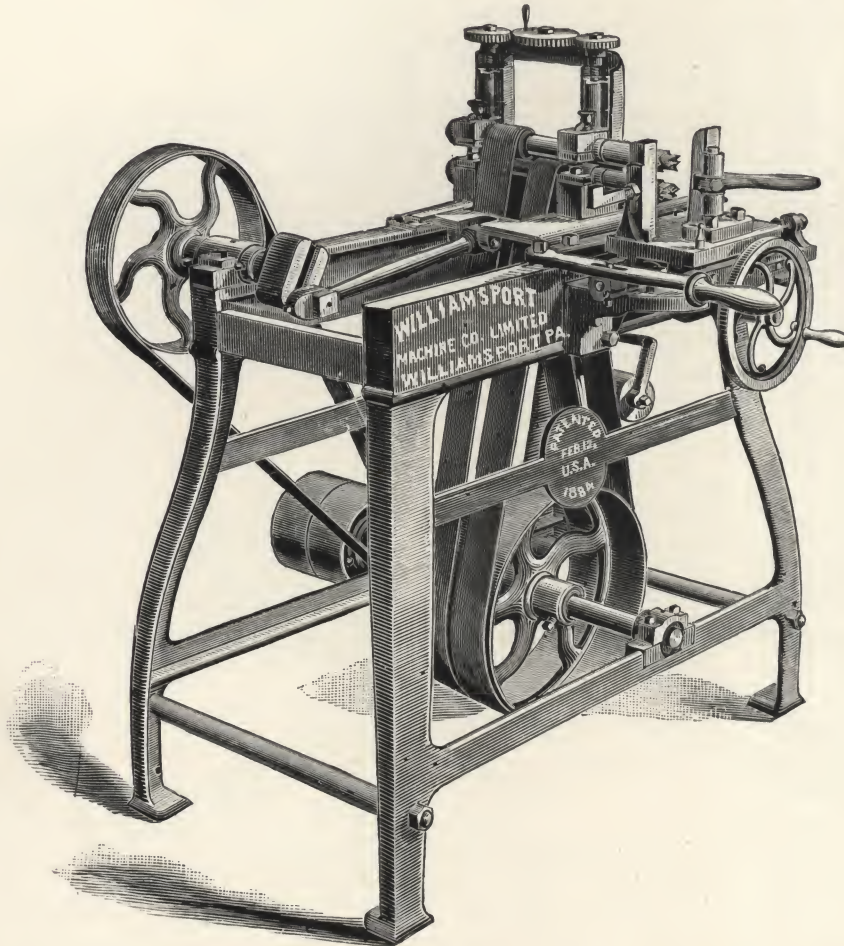
	STYLE.	T. & L. Pulleys.	Revs. per Minute.	H. P. Required.	Weight.	Code Word.
Fig. 101	—No. 1, complete, either style of clamp, 3 bits, 8 x 4 $\frac{1}{4}$		1,000	1 $\frac{1}{2}$	800	Furbish.
Fig. 101 A	—No. 2, " 2 spindles, either clamp,					Furlong.
Fig. 101 B	—No. 3, " 3 spindles, " "					Furnace.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 102.

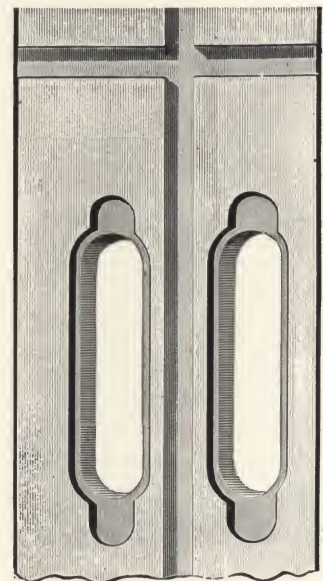
WILLIAMSPORT MACHINE CO.'S

Wilbur Patent Pulley Mortising Machine and Patent Window Pulleys.



PATENTED OCT. 21, 1894.

Pulley Stile, showing mortises and extra long rebate for pulley ends.



HAVING made arrangements with the Patentee, we are now the sole manufacturers of the Wilbur Pulley Mortiser, and would call your special attention to the new **Window Pulley Mortising Machine**, which will do the work of any two other machines now in the market.

The advantages of this machine over all others are :

1st. **The Remedy** of the fault which other machines have of not cutting for the ends of the pulley flanges. **The Cutting** of a rebate long enough for the ends of the pulley flanges to allow the screws to enter the wood without splitting, at the same time the mortises are made, thus completing the operation of preparing the jambs for the pulleys at one handling.

2d. **The Durability** of the bits, which, being sharpened from the ends, always maintain their size, and having adjustable collars, admit the cutting of any thickness of stock required for stiles.

3d. **The users** of this machine not being obliged to use any particular style of pulley, for as many square end pulleys can be put in with its help as can be done by any machine in the market.

4th. The machine is adjustable to cut mortises up to 4 inches in length, and to different thicknesses of sash.

The machine is made in a thorough manner, journals from best machinery steel, and bits from the best cast steel, and all boxes Babbitted. The machine should be speeded from 5,000 to 6,000, and is arranged to belt direct from main shaft, thereby saving cost of countershaft.

Wilbur Patent Window Pulleys. We can furnish these in any desired quantity. Either plain or bronzed face, 1¾-inch, 2 inch or 2¼ inch. Prices quoted upon application.

	T. & L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 102—Pulley Mortising Machine	7 x 3½	700	600	Furtive.

AMERICAN WOOD-WORKING MACHINE CO.

C. B. ROGERS & CO.'S

MOULDERS.

MOULDERS have been a specialty of the Rogers Branch for fifty years. Experience coupled with persistent effort in one direction should develop satisfactory results, in this case we have reason to believe that it has resulted in the production of the most complete and perfect line of Moulding Machines to-day offered to the trade. Heavy and substantial, thoroughly well made and supplied with every necessary and convenient adjustment.

GENERAL.

Our Inside Moulders are all built on one general design, varying only in size, weight and some few special features adapting them for particular lines of work. The frames of all are low, with a planed surface on top to which all the working parts are securely fastened. This leaves all parts such as lower roll boxes, side spindle boxes and lower cylinder easily accessible for any purpose.

HEADS.

The Cylinders and side heads are all made from crucible steel forgings, are of large swing, slotted on four sides and take large, strong bolts; top, bottom and side heads on each machine take same size bolts and knives. Pulleys are fitted to taper and held in position by nut.

BEARINGS.

All Boxes are long and connected in yoke form and caps are planed to a seat. Side spindle yokes have very large bearings on flat cross bars, and adjustable across the entire width of machine and tilt in either direction for bevel work. The lower box and step for side spindle is new and thoroughly satisfactory.

PRESSURES.

The Bonnet pressure and chip breaker for top head is provided with removable sectional shoe. This pressure swings over and the bonnet portion is jointed to drop back to allow easy access to top head. Side pressures rend in circle with the cut and are adjustable. Pressure bars next top head and over the lower one are adjusted by means of hand crank and screw, and the shoe holders attached to these bars have an independent adjustment by means of hand screw. The bars swing up, and end of bed and toe piece swings down leaving the heads absolutely unobstructed. Adjustable matcher plates support the stock while being operated upon by the side heads.

FEED.

The Feed on these machines is exceptionally strong, four large rolls, all driven, and the top ones geared by means of our new device which does away with all short studs and connecting links, all gears being fast on through shafts, running in substantial boxes easily oiled while the machine is in operation and ample changes of feed are provided for. We belt feed to tight and loose pulleys with or without binder, or three speed cone with friction clutch as desired. The feed is controlled by levers at feeding-in end and at the side of machine opposite the side spindles.

ADJUSTMENTS.

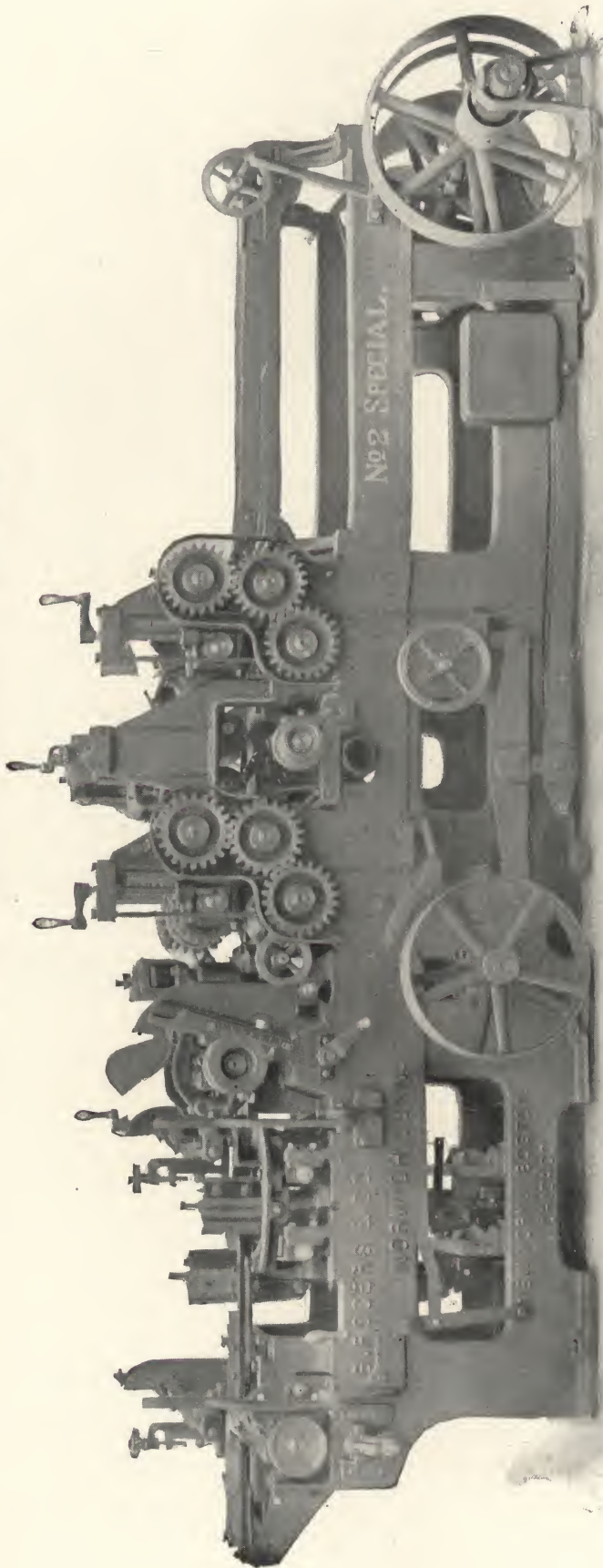
All Heads are adjustable up and down and across the machine from side to side and the side heads tilt. In moving the top and bottom heads laterally the guides need not be disturbed for they are not attached to either yoke. This is of special importance as referring to the lower head and will be appreciated by operators of other machines. Side spindles when tilted may be firmly clamped and yet adjusted across the machine and when set to proper width clamped positively, the two fastening devices being independent of each other. The long guide has a graduated adjustment across the machine. The short guides are adjustable in all directions across the machine as well as to and from the side heads and bottom cylinder. For special details of various styles and sizes of machines, see pages 108 to 111.

For General Description of Moulders, see page 107.

Fig. 103.

C. B. ROGERS & CO.'S

No. 2 Special Inside Moulder.



THE "Rogers" Inside Moulders are all built on one general plan of construction and vary only in detail. The No. 2 Special is the heaviest Inside Moulder on the market, is identical with the No. 2, with the additions of special pressures over the first lower head and special appliances for holding the stock down to the bed while being operated upon; these include roll pressure over the lower head and just before the top head, a very positive pressure between the side heads to insure the perfect gauging of hard wood flooring, for which this tool is particularly well adapted; it is in fact intended for use in those mills where dressing of hard wood in all forms is made a specialty.

The Cylinders have large journals running in heavy connected boxes, are slotted on four sides. Top, bottom and side heads all take the same knife and bolt, and all pressure bars and chip-breakers are adjustable for large swing of knife.

The Side Spindle Yokes are supported on flat cross bars, with double gib to take up wear, and are so placed that they adjust across full width of machine and tilt for bevel work.

The Long Guide is also adjustable by ratchet and pawl, the spring guide at feeding end and a side pressure before the cut of top head adjust by screw and hand wheel. **Heads** are large and have lateral adjustment; lower head has parallel raising device.

Feed Rolls 7 inches diameter, all driven, top ones by special expansion device, which does away with all short studs and expansion links, all gears being fast on shafts running in self-oiling boxes.

Feed is very strong, driven from main counter on machine, stopped and started by means of shifter on tight and loose pulleys, or by friction cone supplying three changes of speed, levers for handling feed being placed at extreme end of machine as well as within reach of the operator at the side of machine when setting up.

This machine is capable of running stock down to 1/4 inch, round or square. Is built in two sizes as below.

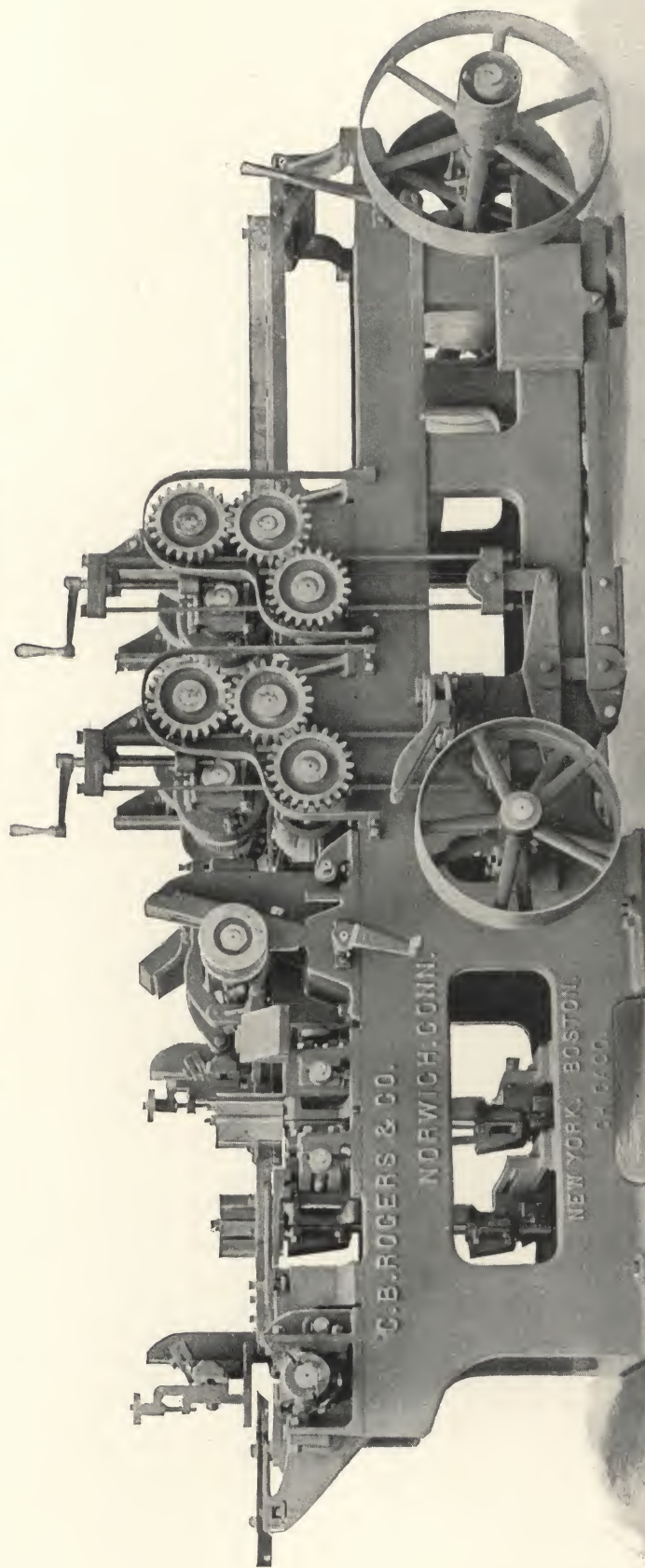
Size.	T. and L. Pulleys.	Weight.	Code Word.
13 inches x 6 inches.	14 x 6	8,000	Furze.
10 inches x 6 inches.	14 x 6	7,700	Fusible.

Fig. 103

Fig. 103 A

Fig. 104.
C. B. ROGERS & CO.'S

No. 1 Heavy Inside Moulder.



For General Description of Moulders, see page 107.

THIS machine is a very heavy one and thoroughly well adapted to the requirements of a general jobbing mill. It is in common with all these inside moulders, so constructed that all the working parts are easily accessible, and all adjustments and changes quickly made. The pressure bars, guides, etc., have every convenient and necessary adjustment.

The Pressures are so arranged that they can be swung up clear of the bed, so that in the change from one class of work to another, the bed may be left absolutely clear from obstructions from the top cylinder out.

The Supports for cylinder yokes are very heavy and firmly attached to planed seats on frame. Top and bottom heads have lateral adjustment and are also provided with parallel raising device.

The Cylinders have large journals running in heavy connected boxes, are slotted on four sides. Top, bottom and side heads all take the same knife and bolt.

The Guides, chip breaker and bars being adjustable to permit of a large projection of knife. The side spindle yokes are supported on flat cross bars with double gib to take up wear, and are so placed that they adjust across the full width of the machine and tilt in either direction for bevel work. The long guide being adjustable by ratchet and pawl.

The Spring Guide at the feeding-in end of the machine adjusts by screw and hand wheel. The feed rolls are 7 inches in diameter, all driven; top ones by special expansion device which does away with all short studs and connecting links. All gears being fast on shafts running in self-oiling boxes.

The Feed is very strong, driven from main counter on machine and stopped and started by shifter on tight and loose pulleys; or may be fitted with three-step cone feed pulley and clutch as desired. In either case the feed levers are placed one at the feeding-in end of the machine and the other at the side of the machine where the operator stands in setting up. This machine is capable of running stock down to a $\frac{1}{4}$ inch, square or round. Is built in the following sizes:

Size.	T. and L. Pulleys.	Weight.	Code Word.
13 x 6	14 x 6	6,500	Fussy.
10 x 6	14 x 6	6,200	Fustian.

Fig. 104

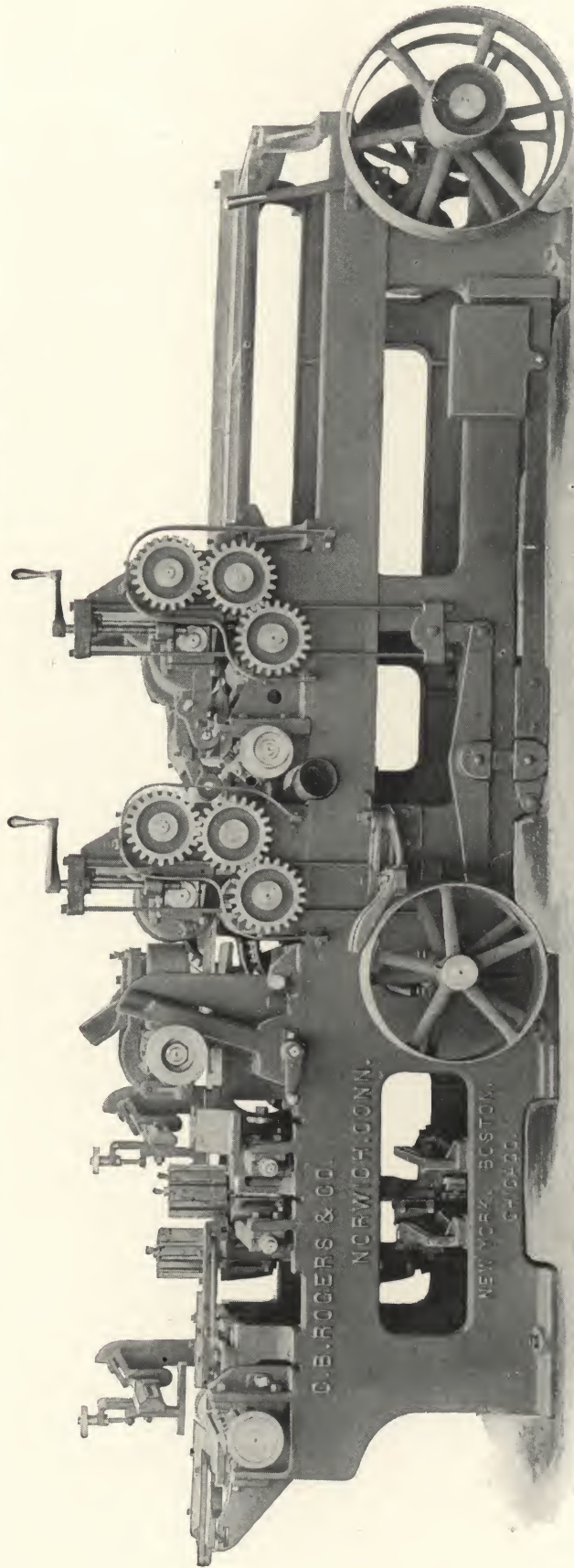
Fig. 104 A

For General Description of Moulders, see page 107.

Fig. 105.

C. B. ROGERS & CO.'S

No. 2 Heavy Regular Inside Moulder.



THE Rogers No. 2 Regular Inside Moulder is very heavy and substantial, so designed that all of the working parts are above the top line of the frame which has planed seats, to which the roll posts, cylinder beds and supports and other working parts are attached. This brings all the working parts of the machine within easy access of the operator; the adjustments are all very simple, quickly and easily made, and all changes from one class of work to another are quickly accomplished.

The Cylinders are large and slotted on four sides, with heavy bearings running in connecting boxes to insure perfect alignment; top, bottom and side heads all take the same knife and bolt and all pressure bars and chip-breakers are adjusted for a large swing of knife. The regular top and bottom heads both adjust laterally.

Side Spindles adjust across the full width of the machine and tilt in either direction for bevel work.

The Special Lower Head, for dressing the under side of the stock before it passes to the top cylinder bed plate, is placed between the feed rolls and so arranged that it can be drawn out to one side for easy access in setting up, and sharpening knives and for any necessary adjustment. The addition of this head to a moulder is a very desirable feature in machines used principally for dressing hard wood.

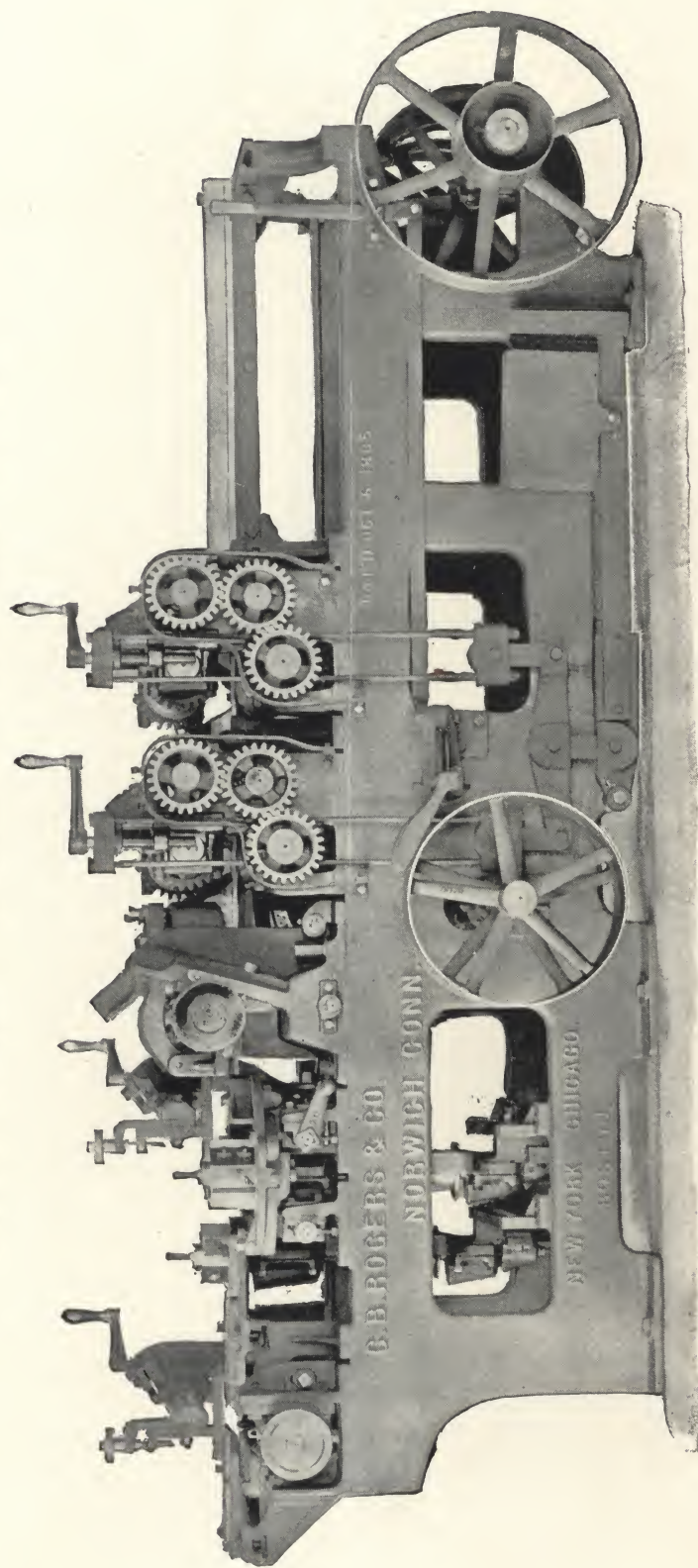
The feed rolls are 7 inches in diameter, all driven, the top ones by a special expansion device which does away with all short studs and connecting links. **All Gears** being fast on shafts running in self-oiling boxes. **The Feed** is very strong, driven from main counter, and may be supplied with either tightener and change of pulleys for change of feed, or with a cone feed pulley with three changes as desired.

The Levers for supplying the feed are placed one at the feeding-in end of the machine and one at the operator's stand at the side, a most convenient arrangement. No. 2 Regular is built in the sizes as given below.

Fig. 105	Size.	T. and L. Pulleys.	Weight.	Code Word.
Fig. 105 A	13 x 6	14 x 6	7,000	Gabion.
	10 x 6	14 x 6	6,850	Gaffer.

C. B. ROGERS & CO.'S

No. 3 Inside Moulder, Medium Weight.



THIS machine was designed to meet the demand for a little lower priced moulder than our regular heavy pattern inside machine. It is somewhat lighter in many respects, but the yokes for top and bottom heads and the side spindles and yokes are practically the same as on the heavy machine. The working parts of this machine are easily accessible, the lower roll boxes being above the top of the frame. All adjustments are very quickly and easily made; pressure bars arranged to swing up clear of the bed; the guides are all adjustable in every necessary direction, and the top and bottom heads both have lateral adjustment and parallel hoist; side spindles tilt in either direction and adjust across the full width of the machine; top, bottom and side heads are all the same size and take the same knife and bolt.

Pressures.—The Bonnet pressure and pressure bars are adjustable to large projection of knife.
The Feed on this machine is exceptionally strong, all rolls being driven, the top ones by means of our pattern device which does away with all short studs and connecting links.

All Gears being fast to the shafts which run in substantial boxes that can be oiled while the machine is in operation.

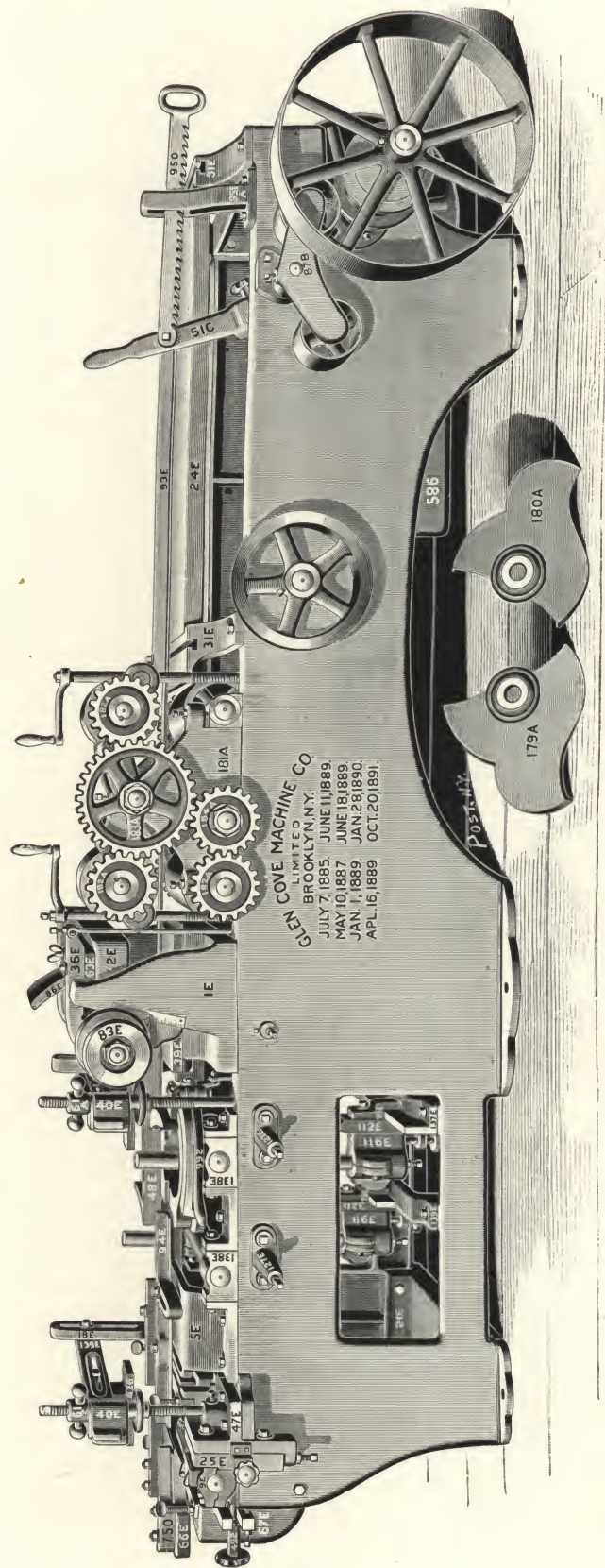
The Feed is very strong, driven from main counter on machine and stopped by shifter on tight and loose pulleys; or may be fitted with three-step cone feed pulley and clutch as desired. In either case the feed levers are placed one at the feeding-in end of the machine and the other at the side of the machine, where the operator stands in setting up.

Fig. 106	Speed.	T. and L. Pulleys.	Weight.	Code Word.
Fig. 106 A	15 x 4	12 x 6	5,500	Gagiste.
Fig. 106 B	10 x 4	12 x 6	5,200	Gagged.
	8 x 4	12 x 6	5,000	Gaiety.

Fig. 107.

GLEN COVE MACHINE CO.'S

No. 80, 14-Inch Four Side Inside Moulder



N. B.—WE BUILD THIS MACHINE WITH EITHER SCREW OR GEAR FEED.

This machine is built in two sizes, as described on opposite page.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 107.

GLEN COVE MACHINE CO.'S

No. 80, 14-Inch Four Side Inside Moulder.

THIS is a heavy, powerful, Fast Feeding Machine, and is especially designed to do a large amount of first-class work, and has all of our latest improvements, which consist in part as follows:

Parallel Hoist to Feed Rolls.

Weighted Chip-Breaker to Side Heads.

Opening End of Machine to get at under cutter head.

Gripping Device to hold the side head leg firmly in place when set.

Also means by which the Matcher Plates can be adjusted without the use of pieces of brass, tin, etc.

It works mouldings from the smallest up to 14 inches wide and 6 inches thick, on all four sides at one operation.

It has every advantage claimed for the Outside Machine, combined with the durability, strength and stability of the Inside Machine, and can be used as a Matcher for flooring and ceiling.

Our Patented Weighted Chip-Breaker is held up to the work by a weight, which gives an even, steady pressure, whether a light or heavy cut is being made, and effectually prevents the side head knives from tearing or splitting the edge of the lumber.

This weight does not have to be removed, and the old-fashioned spring substituted when dressing mouldings, but can be used on any and all kinds of work.

The Patented Gripping Device to Side Heads, is indispensable. By simply pressing the lever forward when the side head is set to the proper width, the side head is firmly fixed in its place, and no amount of pressure from the edge of the board can force it back.

The top and bottom heads and their boxes are adjustable cross-wise of the machine, by means of a screw for fine adjustment.

Each Roll is raised by a single screw, dispensing with the usual complication of shafts, bevel gears, screws, nuts and numerous other features. By our method of adjusting the rolls, the lumber is made to hug the guide without the use of the binding levers or springs.

The Cutter Head Journals are long and large in diameter, and run in improved Self-Oiling Boxes. The heads are square and slotted on all four sides, so that all kinds of sectional knives can be used.

The Cutter Head Pulleys are large in diameter. They are not put on with key ways or set screws, but are carefully fitted to a true taper, and held there by a nut, which renders it impossible to strain the spindle or throw the head out of balance.

All the Shafting is of Steel.

All the parts and pieces of these machines have numbers or letters cast or stamped upon them, so that duplicates, if wanted, may be ordered by simply giving the number or letter of the piece wanted.

All shafts and fittings, including bolts, screws, and nuts, are finished to United States Standard sizes.

We build these machines either with Gear or Screw Feed, as ordered.

Belting required on this machine: 37 feet of 4-inch Belt Screw Feed, 67 feet of 3½-inch belt, 9 feet of 3-inch belt.

Fig. 107 A.

GLEN COVE MACHINE CO.'S

No. 82, 12-Inch Four Side Inside Moulder.

Our No. 82 12-inch Inside Moulder has the same general features as described in the No. 80, and will dress 12 inches wide and 6 inches thick on all four sides at one operation.

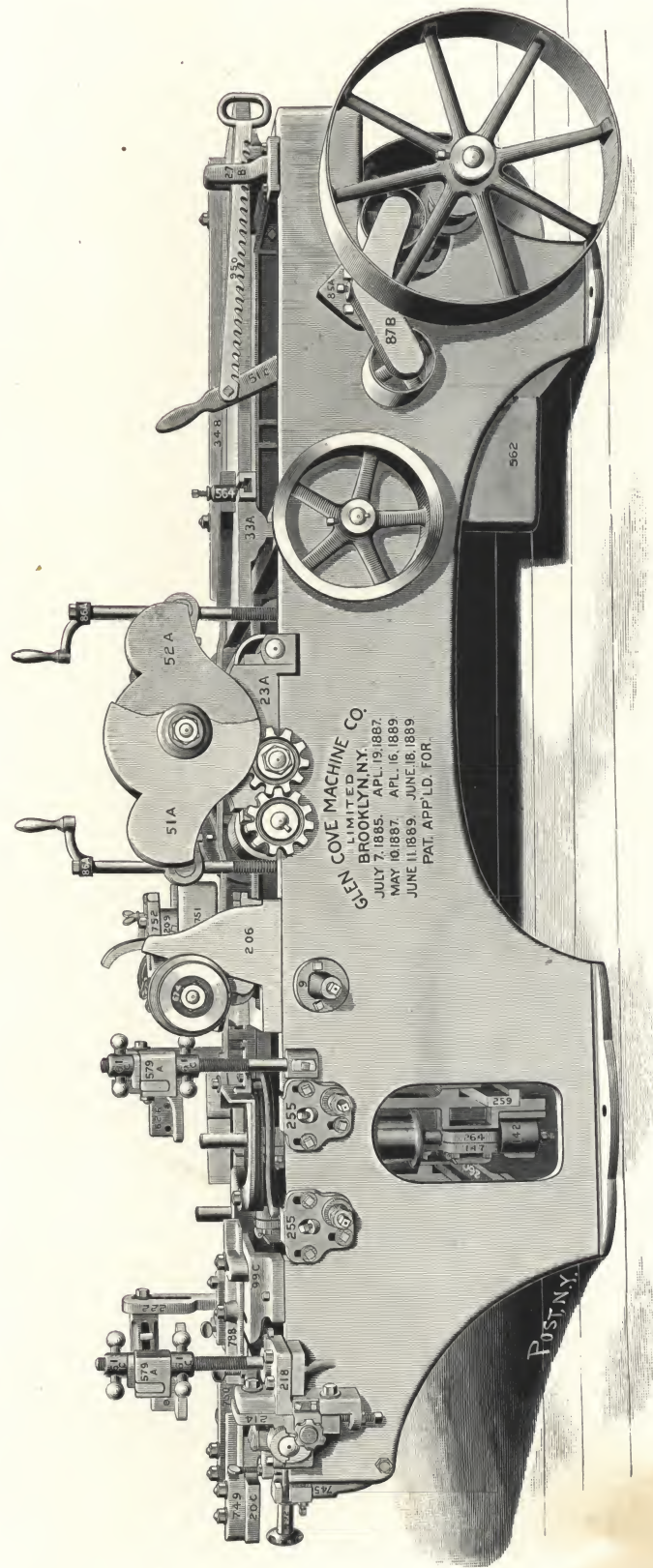
We build this machine either with **Gear or Screw Feed**.

	SIZES.	T. & L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 107	—No. 80, 14-inch, Four Side.....	14 x 6	750	7,000	Gaiters.
Fig. 107 A	—No. 82, 12-inch, Four Side.....	12 x 6	650	6,700	Galaxy.

Fig. 108.

GLEN COVE MACHINE CO.'S

No. 84, Patented Fast Feed Inside Moulding Machine.



N. B.—WE BUILD THIS MACHINE WITH EITHER SCREW OR GEAR FEED.

This machine is built in two sizes, as described on opposite page.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 108.

GLEN COVE MACHINE CO.'S

No. 84, 10-Inch Inside Moulder.

THIS cut represents our No. 84 10-inch Inside Moulder. While lighter than the 12-inch and 14-inch machines, it is still proportionately heavy, and where a machine is wanted to dress only 10 inches wide, this machine commends itself.

It works mouldings from the smallest up to 10 inches wide and $4\frac{1}{2}$ inches thick on all four sides at one operation. It has every advantage claimed for the Outside Machine, combined with the strength, stability and durability of the Inside Machine, and can be used as a Matcher for flooring and ceiling.

It has also an attachment to the Feed Lever—not shown in the cut—whereby the Feed can be started or stopped, while the operator is setting up, at the top cutter head.

The **Weighted Chip-Breaker** is held up to the work by a weight, which gives an even, steady pressure while the cut is being made, and effectually prevents the side head knives from tearing or splitting the edge of the lumber. This weight does not have to be removed and the old-fashioned spring substituted when dressing mouldings, but can be used on any and all kinds of work.

Both **Top and Bottom Cutter Head Boxes** are yoked together, which prevents the boxes from getting out of line and cramping the journals. The yoke is heavy and strong, and the cutter head bed thick and solid, thus insuring good work. The yoke and top cylinder, with its boxes, chip-breakers, etc., may be removed, without in any way disturbing the bed, or any other part of the machine.

The **Top and Bottom Head** and their boxes are adjustable cross-wise of the machine, by means of a screw for fine adjustment.

We make this machine either **Screw or Gear Feed**, as ordered.

Belting required for Screw Feed: 33 feet of $3\frac{1}{2}$ -inch belt, 66 feet of 3-inch belt.

Fig. 108 A.

GLEN COVE MACHINE CO.'S

No. 86, 8-Inch Inside Moulder.

Our No. 86 8-inch Inside Moulder has the same general features as described in the No. 84, and where a machine is wanted to dress only eight inches wide, this machine will commend itself.

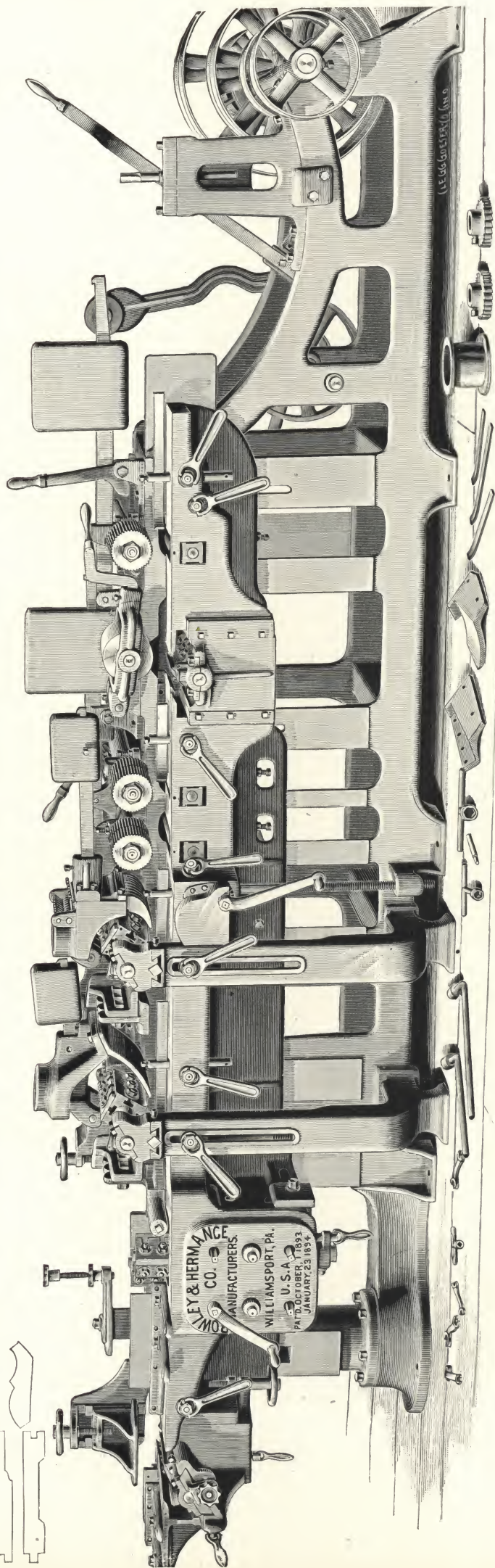
We make this machine with either **Screw or Gear Feed**, as ordered.

Belting required for Screw Feed: 33 feet of $3\frac{1}{2}$ -inch belt, 66 feet of 3-inch belt.

SIZES.	T. & L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 108 —No. 84, Four Side.....	12 x 6	700	4,500	Galega.
Fig. 108 A—No. 86, Four Side.....	14 x 6	700	4,200	Galiot.

Fig. 109.

ROWLEY & HERMANCO CO.'S Six Head, Six Roll, Combined Moulder and Flooring Machine.



Patented October 10th, 1893, January 23rd, 1894, June 12th, 1894, February 12th, 1895. Length, 16½ feet.

THIS is the **Largest and Heaviest Moulder** ever built, and for the manufacture of **Maple Floorings, Hard Wood Mouldings or Heavy Mouldings** of any description, **Wooden Gutters**, etc., etc., at a rapid rate of feed and the finest possible finish, this machine has no equal. This machine covers all the advantages contained in our other moulders. **The Side Heads** are adjusted by our Patent Side Setting Device, by which they can be set either straight or at an angle from the front of the machine; they also have a lateral and vertical adjustment.

The first **Under Head** takes off the "humps," and straightens the stock to give a true surface and level bearing on the table. The first **Top Head** makes the roughing-out cut. The second **Top Head** makes the finishing cut. **The Side Heads** and the rear **Bottom Head** finish the edges and under-side of the work.

It will turn out more lineal feet per minute of the **Highest Grade** material, than any other Moulder or Flooring Machine on the market, and it has many advantages over other makes of Moulding and Flooring Machines.

The features of this machine should be carefully examined by purchasers when selecting a **Hard Wood Flooring Machine**. They are built in three sizes, to work 9, 10 and 12 inches wide by 4½ inches thick, and the table will lower 12 inches. It has four rates of feed, viz: 25, 30, 35 and 40 lineal feet per minute.

Each machine is furnished with six heads, slotted on four sides, two plain knives with each head, one set of **Shinner Matcher Heads**, one extra double flange feed pulley, two extra pressure shoes and the necessary wrenches.

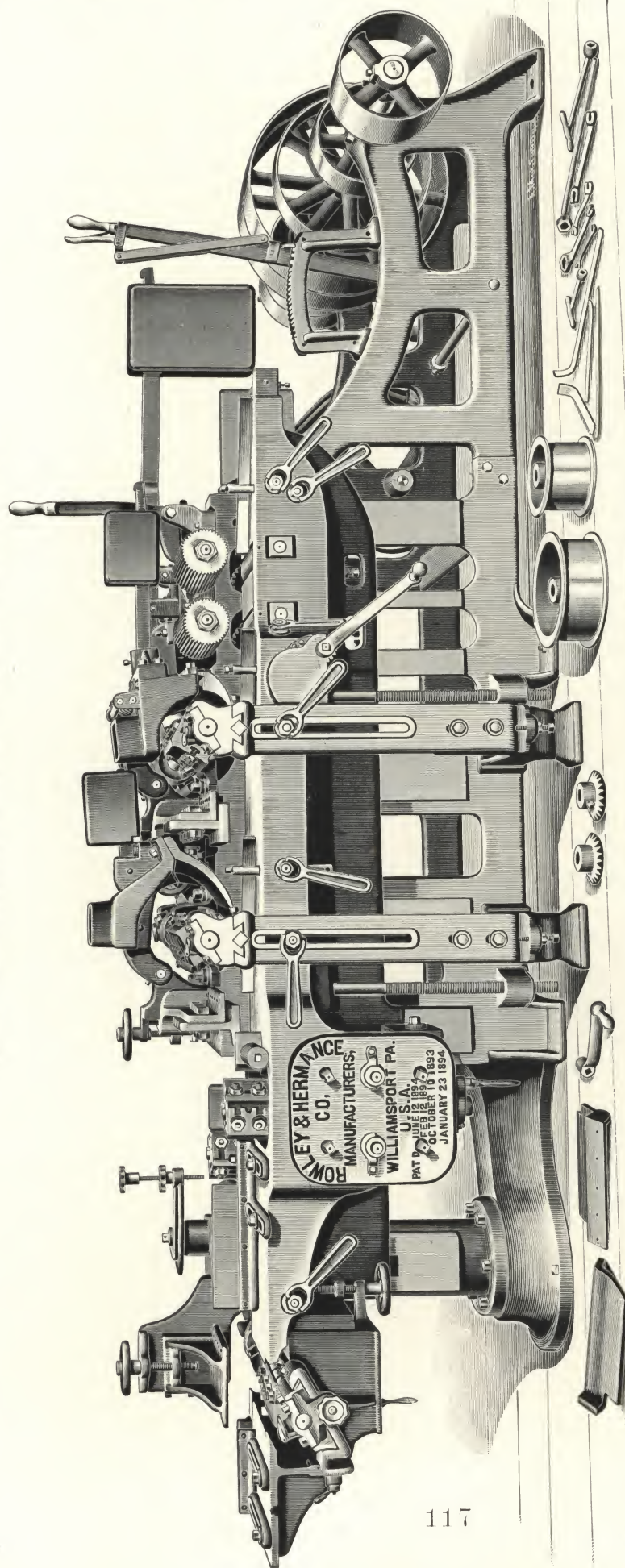
SIZES.				Approximate Weight.	Average H. P. Required.	Code Word.
Tight and Loose Pulleys.	Revs. Per Minute.	Cubic Measurement.				
14 x 8	850	310		8,300	10 to 12	Gallery.
14 x 8	850	327		8,600	10 to 12	Galling.
14 x 8	850	345		9,200	10 to 12	Gallop.

Fig. 109 —To work 9 inches wide.....

Fig. 109 A—To work 10 inches wide.....

Fig. 109 B—To work 12 inches wide.....

Fig. 110.
ROWLEY & HERMANCO CO.'S
New Column Five Head Moulder.



Patented October 10th, 1893, January 23rd, 1894, June 12th, 1894, February 12th, 1895.

THIS machine contains all the improvements of our New Column Moulders, with the addition of extra top head for making the roughing-out cut. For making hard-wood mouldings, or for mouldings of any description, wooden gutters, hard wood flooring, etc., etc., of the highest possible finish, this machine has no superior.

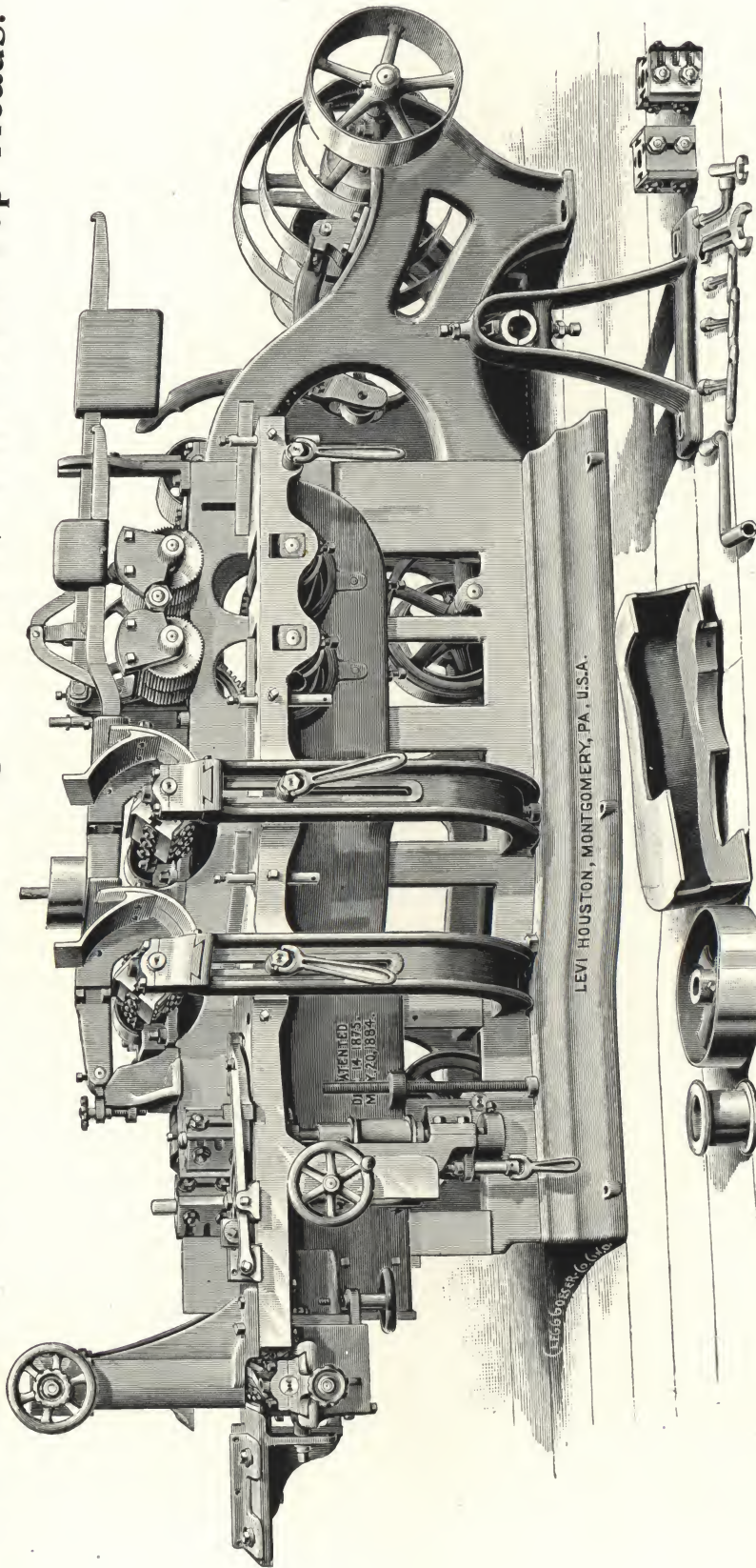
The Side Heads are adjusted by our patent side setting device, by which they can be set either straight or at an angle from the front of the machine. They also have lateral and vertical adjustments. **The First Top Head** makes the roughing-out cut. **The Second Top Head** makes the finishing cut. **The Side Heads** and the bottom head finish the edges and under side of the work. The outside bearings for the top heads are provided with vertical adjustments. A sectional chip-breaker and pressure shoe are provided for the first top head. The pressure shoe for the second top head is also sectional.

An Automatic Chip-Breaker is attached to the outside headstock, which adjusts itself automatically to any position in which the outside head may be placed.

This machine will turn out more lineal feet per minute of the highest grade material than any other Moulder or Flooring Machine on the market, and it has many advantages over other makes of Moulding and Flooring Machines. The improvements in this machine should be carefully examined by purchasers when selecting a hard wood flooring machine. It is built in three sizes, to work 9, 10 and 12 inches wide by 4½ inches thick, and the table will lower 12 inches. It has four rates of feed, viz: 25 feet, 35 feet, 40 feet and 40 feet, lineal, per minute. Each machine is furnished with five (5) heads, slotted on four sides, two (2) plain knives with each head, two extra double flange feed pulleys, two extra pressure shoes and the necessary wrenches.

SIZES.	Tight and Loose Pulleys.	Revs. per Minute.	Cubic Measurement.	Approximate Weight.	H. P. Required.	Average	Code Word.
Fig. 110 —To work 9 inches wide.	14 x 8	850	.....	6,800	8 to 10	.....	Gambette.
Fig. 110 A—To work 10 inches wide.	14 x 8	850	.....	7,000	8 to 10	.....	Gambol.
Fig. 110 B—To work 12 inches wide.	14 x 8	850	.....	7,200	8 to 10	.....	Gambester.

Fig. III.
LEVI HOUSTON CO.'S
New 10-inch and 12-inch Moulding Machine, with Two Top Heads.



BALL BEARINGS TO RAISE TABLE.

THE above cut represents our new Moulding Machine, which is of improved construction, gotten up to supply the wants of car shops and large moulding establishments. The roughing out, or extra top head, will be found very essential when very deep and heavy moulding is to be run and extra smooth finish is required. It is capable of working any moulding up to its capacity in width and five inches deep, and will also dress on four sides flooring and sheathing, planing and matching.

The Table is securely gibbed to the middle of frame and at the rear end near under cutter; also solidly clamped to the frame at front end. It also has the support of two large adjusting screws, which are geared at bottom with a powerful train of gears, making it easy to raise and lower the table.

The Under Cutter has a horizontal and vertical adjustment, and is provided with a very heavy and substantial pressure bar. The hoods over top heads are adjustable to and from cutters and are provided with adjustable steel chip-breakers. Side head belts pull against bottom of boxes.

The Inside and Outside Headstocks are also adjustable. The Outside Head is provided with a special self-adjusting chip-breaker. The feeding mechanism is of improved construction, consisting of four six inch rolls.

The Two Upper Rolls are fluted and heavily weighted, and hung in such a manner that they rise parallel with the bed, thus giving them the full width of lumber. All four rolls are driven with a continuous train of gears, making it the most powerful feed yet applied to any wood-working machine, and fully covered by letters patent.

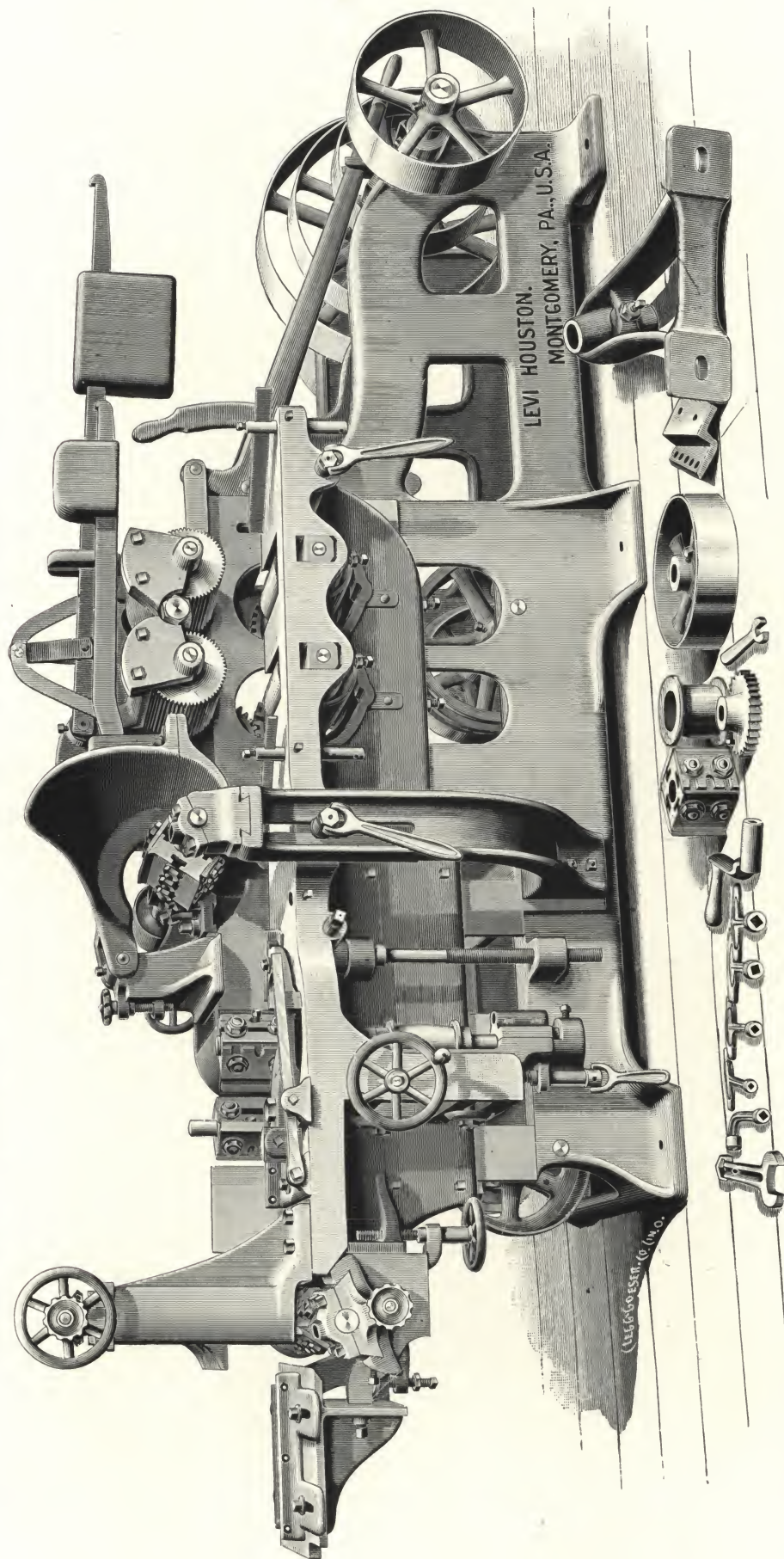
All Heads are made of forged steel, four-sided, four-slotted. One set of straight cutters furnished with each head; also two extra heads and complete set of wrenches. The machine is provided with all necessary springs and two pressure bars. Four rates of feed are provided for, namely: 22, 30, 36 and 52 feet per minute. Side Spindles are provided with self-oiling steps. Belts required: one belt 16 feet 1 1/2 inches long, 4 1/2 inches wide; one belt 18 feet 5 inches long, 4 1/2 inches wide; one belt 12 feet 2 inches long, 3 inches wide; one belt 11 feet 6 inches long, 2 1/2 inches wide.

SIZES.		Tight and Loose Pulleys.		Revs. per Minute.		Cubic Measurements.		Weight.		Average H. P. Required.		Code Word.	
Fig. 111	—To work 10 inches wide	12 x 8	900	900	4,800	4,800	4,800	4,800	4,800	6 to 10	6 to 10	Gander.	Gander.
Fig. 111 A	—To work 12 inches wide	12 x 8	900	900	4,800	4,800	4,800	4,800	4,800	6 to 10	6 to 10	Gander.	Gander.

Fig. 112.

LEVI HOUSTON CO.'S

New 10-inch and 12-inch Four-Sided Moulder.



BALL BEARINGS TO RAISE TABLE.

THE accompanying cut represents our new Improved Four-Headed Moulding or Sticking Machine, which is of improved construction, gotten up to supply the wants of car shops and large moulding establishments. It is capable of working any moulding up to its capacity in width and five inches deep, and will also dress, on four sides, flooring and sheathing, planing and matching.

The Table is securely gibbed to middle of frame and at the rear end near the under cutter; also solidly clamped to frame at the front end. The under cutter has horizontal and vertical adjustments, and is provided with a very heavy and substantial pressure bar independent of the frame. The top headstock has lateral adjustment, and is provided with a patent outside bearing, improved construction, consisting of four six-inch rolls. The two upper rolls are fitted and heavily weighted, and hug in such a manner that they rise parallel with the bed, thus giving them an equivalent bearing the full width of lumber. All four rolls are driven with a continuous train of gears, making it the most powerful feed yet applied to any wood-working machine, and fully covered by letters patent.

All Heads are made of forged steel, four-sided, four-slotted. One set of straight cutters is furnished with each head; also one extra head and one complete set of wrenches, etc.

Side Head belts pull against bottom of boxes. The Journal Boxes are on an incline and lined with genuine babbitt metal. The machine is provided with a lever device to raise the feed rolls up off the material, and an adjustable spring chip-breaker for the outside head. The frame is heavy, strong and well braced in all parts subject to any strain, and the machine is constructed in a first-class manner throughout.

Four rates of feed are provided for, namely: 22, 30, 36 and 52 feet per minute. The Belts required for this machine are: One belt for top head, 15 feet 5 inches long, 5 inches wide; one belt for under cutter, 20 feet long, 3 1/2 inches wide, one belt for outside head, 15 feet 9 inches long, 3 inches wide; one belt for inside head, 16 feet 7 inches long, 3 inches wide; one outside feed belt, 11 feet 7 inches long, 3 inches wide; one inside feed belt, 10 feet 3 inches long, 3 inches wide; one binder belt, 10 feet long (double belt) 2 1/2 inches wide.

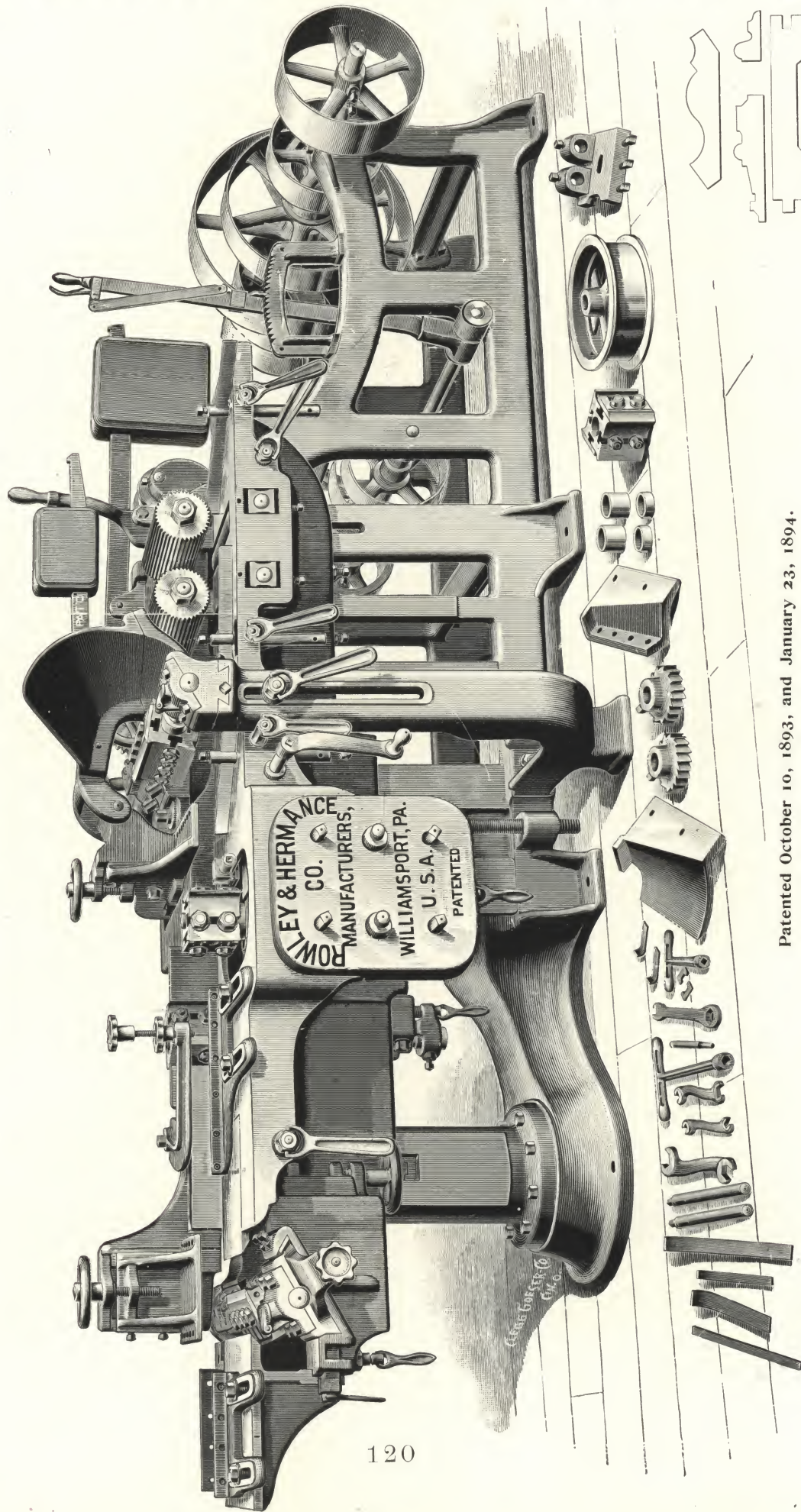
SIZES.	Tight and Loose Pulleys.		Revs. per Minute.
	12 x 8	12 x 8	
Fig. 112 —To work 10 inches wide.....	900
Fig. 112 A—To work 12 inches wide.....	900

Cubic Measurements.	Weight.	H. P. Required.	Average	Code Word.
.....	4,300	6 to 10	6 to 10	Gangway.
.....	4,300	6 to 10	6 to 10	Gantelet.

Fig. 113.

ROWLEY & HERMANCE CO.'S

New Column Twelve-Inch Four-Sided Moulder.



Patented October 10, 1893, and January 23, 1894.

NOTICE.—This machine has our Patent Adjustable Inside Headstock, with horizontal and angular adjustments, by which it can be set either straight or at an angle from the front of the machine. This improvement cannot be found on any other make of Outside Moulder.

THE SIDE HEADS ARE PROVIDED WITH ADJUSTABLE CHIP-BREAKERS.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 113.

ROWLEY & HERMANCO CO.'S

New Column Twelve-Inch Four-Sided Moulder.

Patented October 10, 1893, and January 23, 1894.

All Adjustments Made From the Front Side of the Machine.

THIS machine has the strength and capacity of an inside moulder with all the conveniences of adjustment of an outside machine. It is the heaviest, strongest and most durable machine of its class on the market, and is adapted to the heaviest as well as the finest grades of work, and the highest degree of smoothness can be attained.

The Frame being heavy and cast in one piece, twisting is prevented, and consequently all bearings must keep in line, while the heavy, solid column at the rear end of the machine affords a suitable and substantial support for the table, under head, etc.

The Heavy Outside Bearing for the top arbor extends to the floor and is braced by a solid connection to the base of the frame, with the top secured by a heavy bolt passing through the table and frame, forming an additional support.

The Feed Works are the strongest made. There are four feed rolls five inches diameter, two upper and two lower, all driven by the most powerful expansion gearing, and feed as strongly when the bed is dropped the full depth as when working thin lumber.

The Top Feed Rolls raise parallel with the bed and bear their full weight evenly on all parts of the work, whether narrow or wide, thus insuring a strong, positive and steady feed at all times. They are heavily weighted and can be instantly raised by a lever to admit the use of a form for setting up the machine on different kinds of work. It has four rates of feed, viz.: 20, 31, 38 and 55 lineal feet per minute. One binder lever starts or stops the feed.

An Adjustable Tightener is provided for the belt that drives the top head, by which the slack is instantly taken up, from the front or working side of the machine. In running narrow moulding or other light work, the strain can be taken off the belt.

Our Patent Compensating Spring is placed under the weight bar to relieve the chip-breaker from jar. This is a *new* and *important* feature, as it prevents friction, and in planing roughly sawed or uneven lumber, holds the chip-breaker firmly upon the material and causes it to ride smoothly over the rough projections, thus avoiding wavy or imperfect work, and the pressure of the chip-breaker is always the same.

The Arbors are of steel and unusually heavy, with extraordinary long boxes, and all belts pull on the bottom of the boxes.

The Side Heads raise and lower with the table. Both the inside and outside spindles are adjustable while in operation by a crank from the *front* side. Both spindles can be set at an angle and either of them raised or lowered, or moved in and out independently of the other without changing the angle, and after these heads are set and a moulding run, if it is found to vary slightly with the original pattern or drawing, the crank can be placed on the lower crank shaft and turned to tip the head in either direction to the slightest degree required.

The Top Head has a lateral adjustment, and the bottom head a lateral and vertical adjustment, both controlled by hand wheels placed convenient to the operator.

The Under Head has an outside bearing beyond the pulley, or three bearings in all.

The Inside Head is perfectly free from all incumbrances, and as easy of access as any other head on the machine.

There is ample space about all the heads to admit of using bits for any kind of work. We have given this feature special attention, as it is very necessary in doing certain kinds of work, to have abundant space for long bits to revolve.

A convenient device is provided for **raising** and **lowering the table**, and the table is so securely clamped to the frame by three heavy bolts that it is as solid as the frame itself.

It is provided with **adjustable chip-breakers** on both sides of the bottom head. It also has adjustable chip-breakers for the side and top heads.

Another very important improvement in this machine is the double spring rest, shown on the floor at the base of the counter-shaft. When it is desired to have pressure close to the top cutter head, the pressure shoe in the rear of top cutter head can be removed and the double spring rest put in place of it, when two springs can be placed in it and run very close to the cutting circle. The spring posts are held in position with our new improved clamp bolt with swivel wrench attached.

It will dress 12 inches wide by $4\frac{1}{4}$ inches thick on four sides, and the table will lower 12 inches.

Each machine is furnished with four heads, slotted on four sides, two plain knives for each head, one extra four slotted head with two plain knives, one double spring rest, one extra double flange feed pulley, four collars, two extra pressure shoes, two extra feed spurs and the necessary wrenches and springs as shown in cut.

It has every advantage included in other moulders, besides many improvements that are not found on any other make of similar machine.

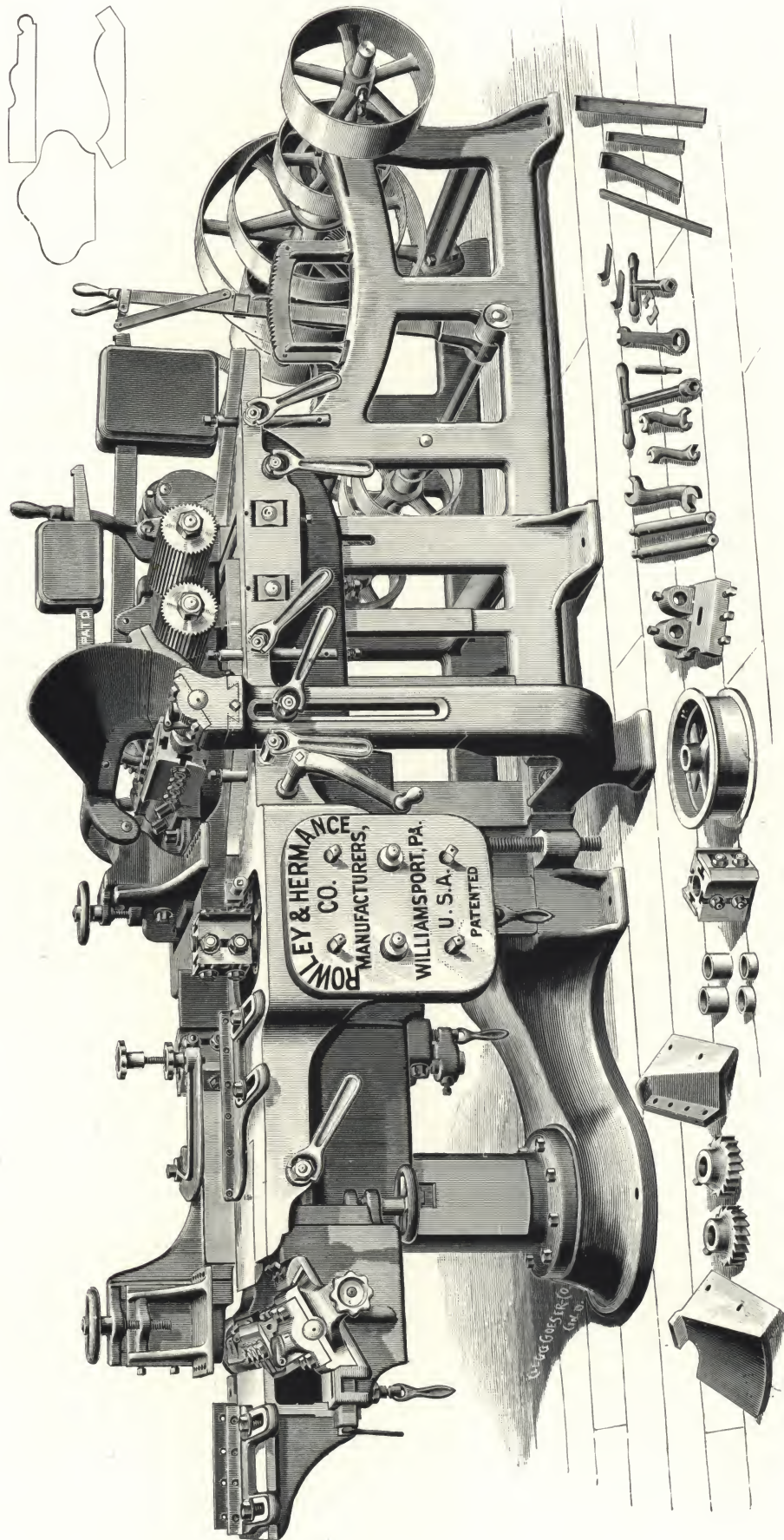
Purchasers should carefully examine the foregoing features when selecting a moulder, as the want of space about the heads and the inconvenience of having to pass around the machine to make the various adjustments, form very serious objections that are not easily overcome.

TO WORK.	Tight and Loose Pulleys.	Revs. per Minute.	Cubic Measurement.	Approximate Weight.	Average H. P. Required.	Code Word.
Fig. 113 —Four Sides	12 x 8	850	226	5,200	6 to 10	Gauge.
Fig. 113 A—Three Sides	12 x 8	850	.....	5,000	.....	Gavelet.
Fig. 113 B—Two Sides	12 x 8	850	.....	4,800	.....	Gayness.
Fig. 113 C—One Side	12 x 8	850	.....	4,600	.....	Gazer.

Fig. 114.

ROWLEY & HERMANCE CO.'S

New Column Ten-Inch Four-Sided Moulder.



Patented October 10, 1893, January 23, 1894, June 12, 1894, and February 12, 1895.

NOTICE.—This machine has our Patent Adjustable Inside Headstock, with horizontal and angular adjustments, by which it can be set either straight or at an angle from the front of the machine. Also our Patent Compensating Chip-Breaker. These improvements cannot be found on any other make of Outside Moulder.

ALL ADJUSTMENTS MADE FROM THE FRONT SIDE OF MACHINE.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 114.

ROWLEY & HERMANCO CO.'S

New Column Ten-Inch Four-Sided Moulder.

Patented October 10, 1893, and January 23, 1894.

All Adjustments Made From the Front Side of the Machine.

THIS machine is the same in design and construction as our **New Column 12-inch Moulder**, having all the strength, durability, improved adjustments, capacity for quantity and quality of work of the larger machines. For complete description see page 121.

We call attention to the following special features in this machine, viz.:

The heavy outside bearing for the **top arbor**, which extends to the floor and acts as an extra support.

The Feed works, the best in use, are started and stopped with a binder.

The Feed is as perfect when the table is lowered to the full capacity of the machine as when at its highest position.

All Feed Rolls are driven. The top rolls raise parallel with the bed and bear their full weight evenly on all parts of the work, whether narrow or wide, which insures a strong, positive and steady feed at all times.

The Upper Rolls are quickly raised by a lever to admit of placing a form for setting up the machine for different kinds of work.

There are four rates of feed, viz.: 20, 31, 38 and 55 lineal feet per minute.

The Side Heads raise and lower with the table. Both the inside and outside spindles are adjustable from the front or working side of the machine while in operation. Either spindle can be set at an angle, and raised or lowered; or moved in and out independently of the other without changing the angle. Both of these heads have adjustable chip-breakers.

An independent adjustment for both of the side spindles, by which the bottom of either spindle is moved in either direction for tipping the head the slightest degree to conform to the pattern.

The Top Head has a lateral adjustment. Bottom head has a lateral and vertical adjustment, and is provided with adjustable chip-breaker on both sides.

The Under Head has three bearings, one of them outside of the pulley. The inside head is perfectly free of all encumbrances, and as easy of access as any other head on the machine.

Ample space has been allowed about all the heads to admit of using bits for any kind of work. Special attention has been given this feature, as it is necessary, in doing certain kinds of work, to have abundant space for long bits to revolve.

It is provided with an **adjustable tightener** for the belt that drives the top head, by which the slack can be instantly taken up. In running narrow moulding or other light work, the strain can be taken off the belt. This is an important feature no other make of moulder contains.

Our Patent Compensating Spring is placed under the weight bar to relieve the chip-breaker from jar. This is a *new* and very *important* feature, as it prevents friction, and in planing roughly sawed or uneven lumber, holds the chip-breaker firmly upon the material and causes it to ride smoothly over the rough projections, thus avoiding wavy and imperfect work; and the pressure of the chip-breaker is always the same.

The Arbors are of the best steel, unusually heavy, with extraordinarily long bearings.

All belts pull on the bottom of the boxes.

The Table is so securely clamped to the frame by three heavy bolts that it is as solid as the frame itself; and a convenient device is provided for raising and lowering the table.

A Double Spring rest is provided for placing the pressure close to the cutting circle in the rear of top cutter head. The spring posts are held in position with our new improved clamp bolt with swivel wrench attached.

It will dress 10 inches wide by 4¼ inches thick on four sides, and the table will lower 12 inches.

Each machine is furnished with four heads, slotted on four sides, two plain knives for each head, one extra four slotted head with two plain knives, one double spring rest, one extra double flange feed pulley, four collars, two extra pressure shoes, two extra feed spurs, and the necessary wrenches and springs as shown in the cut.

This machine covers all the advantages contained in other moulders and many improvements that are on no other make of similar machine.

The above features should be carefully examined by purchasers when selecting a moulder, as the want of space about the heads and the inconvenience of having to pass around the machine to make the various adjustments, form very serious objections that are not easily overcome.

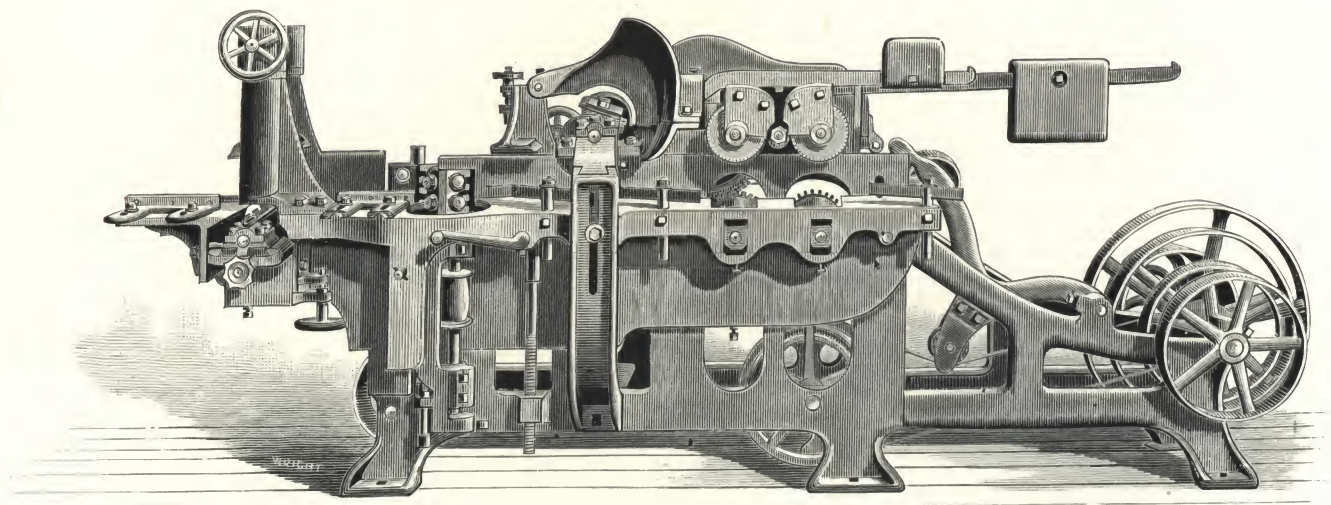
TO WORK.	Tight and Loose Pulleys.	Revs. per Minute.	Cubic Measurement.	Approximate Weight.	Average H. P. Required.	Code Word.
Fig. 114 —Four Sides	12 x 7	850	220	4,800	6 to 8	Gazette.
Fig. 114 A—Three Sides	12 x 7	850	.....	.....	.....	Gelatine.
Fig. 114 B—Two Sides	12 x 7	850	.....	.....	.....	Gelding.
Fig. 114 C—One Side	12 x 7	850	.....	.....	.....	Gender.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 115.

LEVI HOUSTON CO.'S

10-Inch Four-Headed Moulding Machine.



THE accompanying cut represents our new **Improved 10-inch Four-headed Moulding or Sticking Machine**, which is of improved construction, gotten up to supply the wants of car shops and large moulding establishments. It is capable of working any moulding not exceeding ten inches in width and five inches deep, and will also dress, on four sides, flooring and sheathing, planing and matching up to ten inches wide.

The Table is securely gibbed to middle of frame and at the rear end near the under cutter; also solidly clamped to frame at the front end.

The Under Cutter has horizontal and vertical adjustments, and is provided with a very heavy and substantial pressure bar independent of the frame. **The inside and outside headstocks** are also adjustable.

The Top Headstock has a lateral adjustment, and is provided with our patent outside bearing, which is the best outside support applied to any similar machine.

The Feeding mechanism is of improved construction, consisting of four six-inch rolls.

The Two Upper Rolls are fluted and heavily weighted, and hung in such a manner that they rise parallel with the bed, thus giving them an equal bearing the full width of lumber. All four rolls are driven with a continuous train of gears, making it the most powerful feed yet applied to any wood-working machine, and fully covered by letters patent.

All Heads are made of cast-steel, four-sided, four-slotted. One set of straight cutters is furnished with each head; also one extra head and one complete set of wrenches.

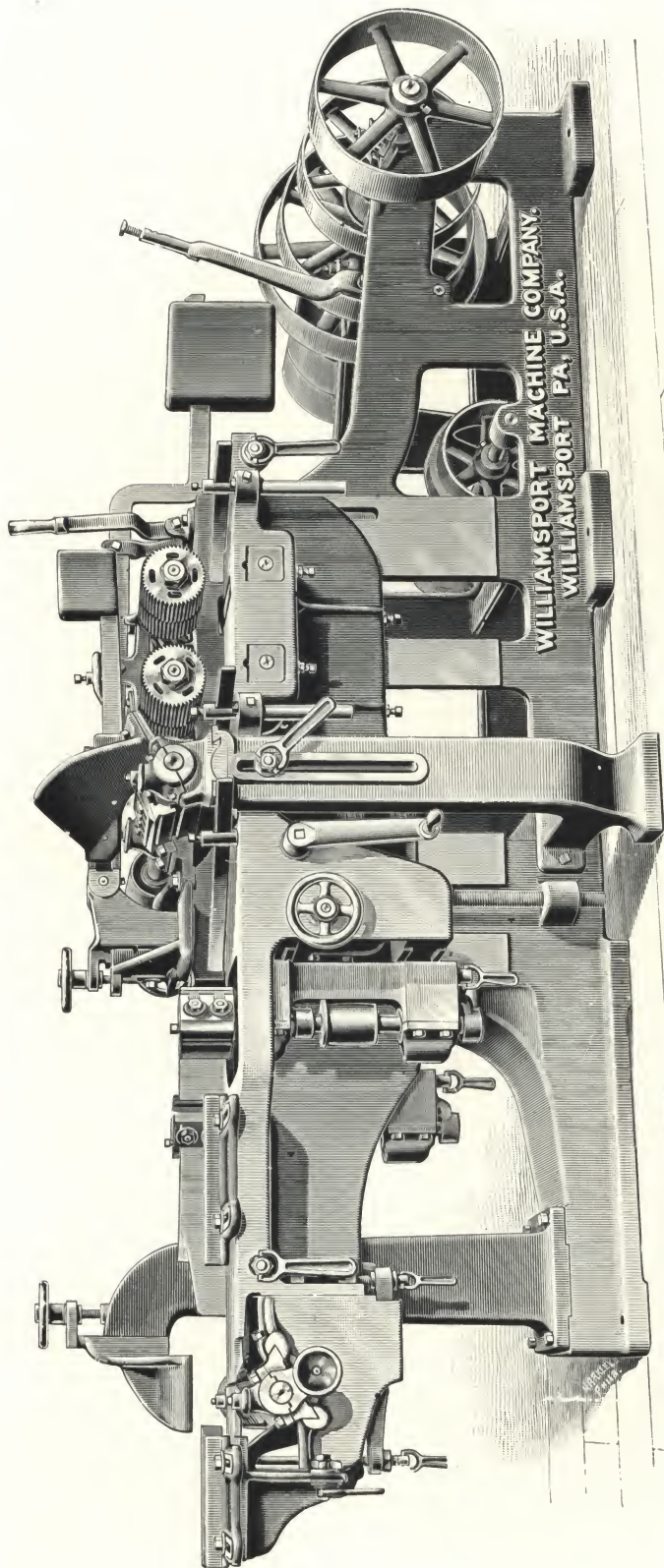
The machine is provided with all necessary springs and pressure bars. Four rates of feed are provided for, namely: 22, 30, 36 and 52 feet per minute.

The Belts required for this machine are: One belt for top head, 15 feet 5 inches long, 5 inches wide; one belt for under cutter, 20 feet long, 4 inches wide; one belt for outside head, 15 feet 6 inches long, 3½ inches wide; one belt for inside head, 16 feet 5 inches long, 3½ inches wide; one outside feed belt, 10 feet 2 inches long, 3 inches wide; one inside feed belt, 10 feet 4 inches long, 3 inches wide; one binder belt, 10 feet long (double belt), 2½ inches wide.

SIZE.	T. and L. Pulleys.	Revs. per Minute.	Cubic Measurement.	Weight.	Code Word.
Fig. 115—To work 10 inches wide.....	12 x 8	900	.....	3,700	Genial.

Fig. 116.

WILLIAMSPORT MACHINE CO.'S Eleven-Inch Moulding Machine.



THE above cut illustrates our new and greatly improved Eleven-Inch, Four-Sided Moulding Machine, which embodies new improvements and superiority in construction that make it nearer perfection than any similar machine yet introduced. Main frame is one solid casting, making it firm and rigid. It will work stock, both sides, to 11 inches wide by 4 1/4 inches thick, and the bed will lower to 12 inches without disconnecting any links or gears.

All Chip Breakers and Pressure-Shoes can be set close to the heads or adjusted back so that each knife can extend to make a three-inch cut in depth.

The Feed is very powerful, consisting of four driven feed rolls 5 1/2 inches in diameter, operated by a set of perfect gears, and the two top rolls are very heavily weighted. These can be easily raised for adjusting and setting up the machine for different kinds of work by the small lever at the top.

The Larger Lever, near the counter-shaft, will stop the feed immediately when desired. Both Side Heads have a special feature; they being attached to the table, raise and lower with it, thus saving time in adjusting, and avoiding any irregular work caused by the tremble or jar of the machine.

The Side Heads can be set to any angle, and can be adjusted laterally or vertically if desired without changing the angle. All of the belts are long and powerful, and pull back to the bottom of the boxes instead of the caps.

The Heads are made of solid forged steel, four sides slotted, with large spindles running in long self-oiling boxes, which are very rigid. Every detail has been given careful attention, and

the machine is undoubtedly one that for durability and excellence of work cannot be surpassed by any similar tool offered to wood-workers to-day.

The Caps and Boxes on all spindles are planed true where the liners go in, thus making a true and flat surface. All the adjustments are precise and quickly made, as the wrenches are attached. The machine has four changes of feed, ranging from 22 to 32 feet per minute.

Since above cut was made we have added a pressure-shoe between the two side heads for the purpose of holding the stock down while being worked at that point.

Have provided the machine with our improved compensating spring-weight on pressure bar, to relieve the chip-breaker from jar. This is an important feature inasmuch as it prevents friction, and in planing lumber that has been sawed roughly or that is uneven, it holds the pressure bar firmly upon the material, thus avoiding the troublesome vibrations that result in wavy or imperfect work.

The Spring is placed inside the weight and rests on the bar, so that it makes no difference at what point on the bar the weight is placed, the tension on spring is always the same.

We have also added a device for taking up the slack in top cylinder-head belt, the same being operated by means of a hand-wheel in easy access to operator.

Belts required are as follows: Top head, 15 feet 9 inches by 5 inches wide; bottom head, 22 feet 8 inches by 4 inches wide; outside head, 17 feet 5 inches by 3 1/2 inches wide; inside head, 18 feet 5 inches by 3 1/2 inches wide; feed belts, one 8 feet 7 inches by 3 inches wide, one 8 feet 1 inch by 3 inches wide, one 7 feet 3 inches by 3 inches wide.

Revs. per Minute.	Cubic Measurement.	Weight.	Code Word.
800	5,000	Genius.

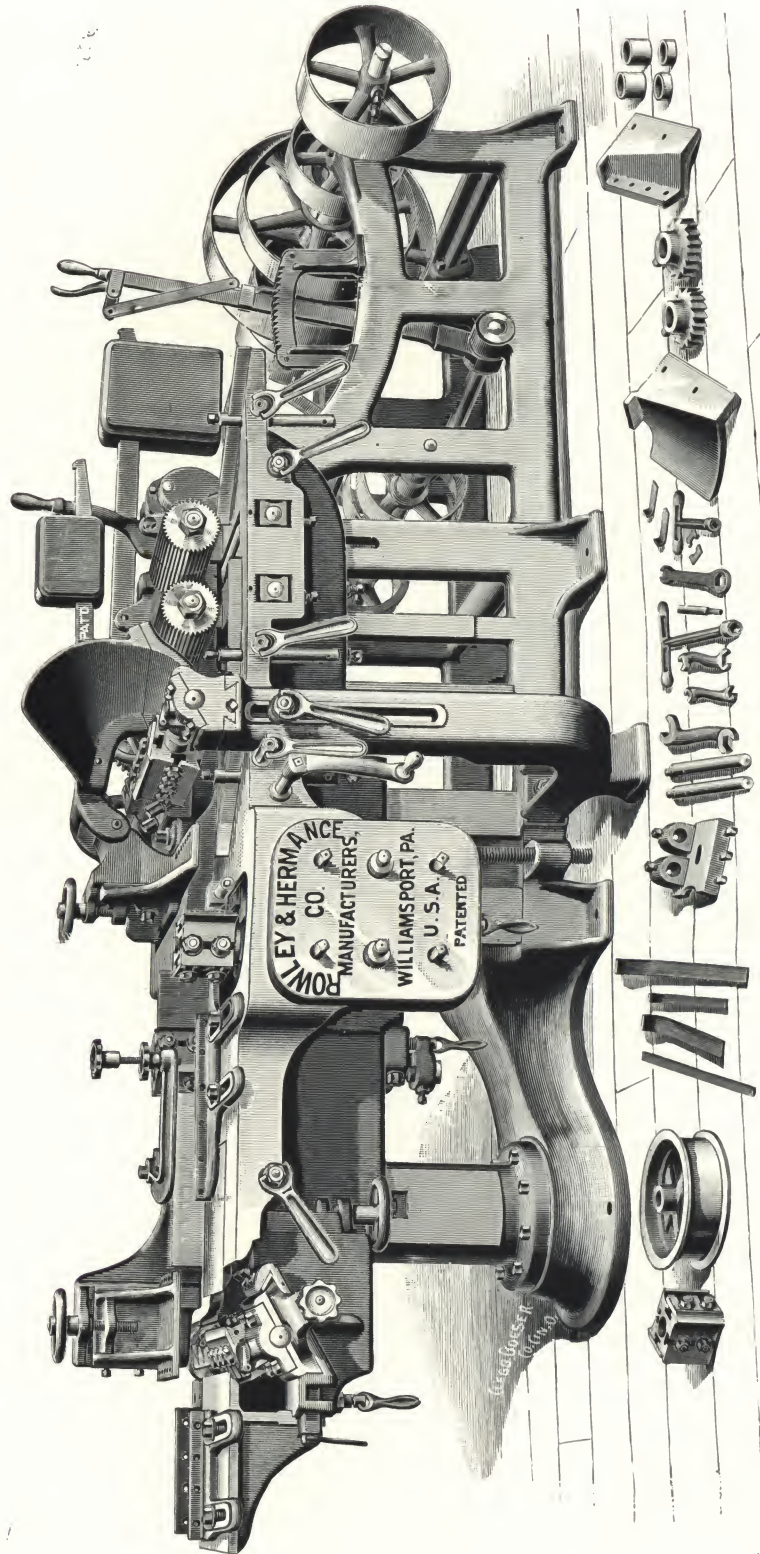
Tight and Loose Pulleys.	SIZE.
.....	14 x 7

Fig. 116—To work 11 inches wide

Fig. 117.

ROWLEY & HERMANCO CO.'S

New Column Nine-Inch Four-Sided Moulder.



Patented October 10, 1893, January 23, 1894, June 12, 1894, and February 12, 1895.

NOTICE.—This machine has our Patent Adjustable Inside Headstock, with horizontal and angular adjustments, by which it can be set either straight or at an angle from the front of the machine. Also our Patent Compensating Chip-Breaker. These improvements cannot be found on any other make of Outside Moulder.

ALL ADJUSTMENTS MADE FROM THE FRONT SIDE OF MACHINE.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 117.

ROWLEY & HERMANCO CO.'S

New Column Nine-Inch Four-Sided Moulder.

All Adjustments Made From the Front Side of the Machine.

IT IS the heaviest, strongest and most durable **9-inch Moulder** on the market. It has the strength and capacity of an inside moulder with all the convenience of adjustment of an outside machine, and will do the heaviest as well as the finest grades of work.

The **Frame** is cast in one piece, which prevents twisting and keeps all bearings in line.

The **Heavy**, solid **Column** at the rear end of the machine affords a suitable and substantial support for table, under head, etc.

The **Heavy Outside Bearing** for the top arbor extends to the floor and is braced by a solid connection to the brace of the frame, with the top secured by a heavy bolt passing through the table and frame, forming an additional support.

The **Feed Works** are the best in use and are started and stopped with a binder. They consist of four feed rolls, each 5 inches in diameter, two above and two below, all driven by the most powerful system of gearing. The upper rolls are instantly raised by the lever shown in the cut, to permit the operator to place a form for setting up the machine for different styles of work. They also raise parallel with the bed and bear their full weight evenly on all parts of the work, whether narrow or wide, thus insuring a strong, positive and steady feed at all times.

The **Expansion** driving the **Bottom** rolls is so positive that the feed is as perfect when the table is lowered to the full capacity of the machine as when at its highest position.

It has four rates of feed, viz.: 20, 31, 38 and 55 lineal feet per minute.

There is an **Adjustable Tightener** provided for the belt that drives the top head, by which the slack is instantly taken up, and in running narrow moulding or other light work, the strain can be taken off the belt. This is an important feature no other make of Moulder contains.

Our Patent **Compensating Spring** is placed under the weight bar to relieve the chip-breaker from jar. This is a **new** and very **important** feature, as it prevents friction, and, in planing roughly sawed or uneven lumber, holds the chip-breaker firmly upon the material and causes it to ride smoothly over the rough projections, thus avoiding wavy or imperfect work, and the pressure of the chip-breaker is always the same.

In all other machines of its class, where the chip-breaker is held down by weight only, it will jump off the lumber when it strikes a projection and at that instance the wavy or imperfect work is done. Our patent avoids this difficulty.

Both of the **Side Heads**, the **Top** and the **Under Heads** are adjustable from the **Front** or **Working Side** of the machine.

There is ample space about the heads to admit of swinging long knives. The device for raising and lowering the table and clamping it, and the adjustable **Chip-breakers** for the bottom head are convenient, simple and perfect.

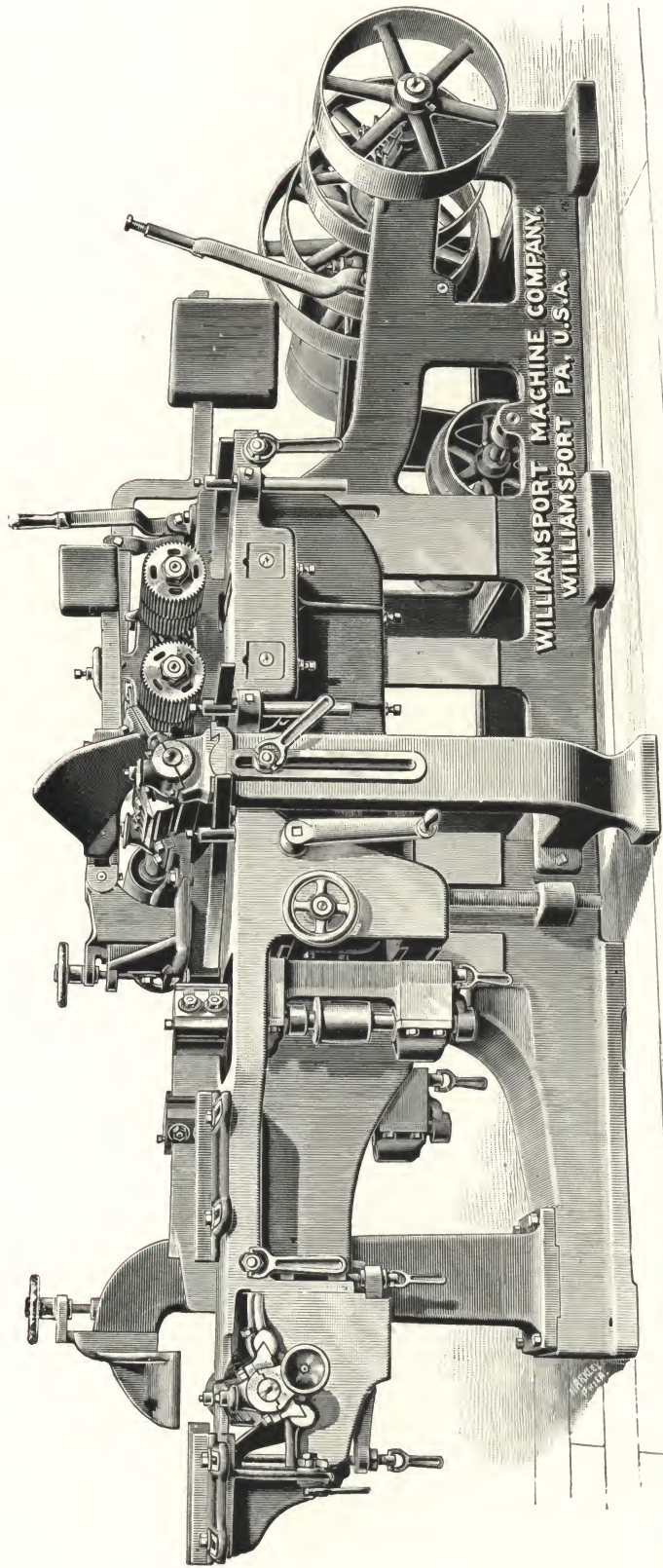
Each machine is furnished with five heads slotted on four sides, two plain knives for each head, one double spring rest, one extra double flange feed pulley, four collars, two extra pressure shoes, two extra feed spurs and necessary wrenches and springs as shown in the cut.

TO WORK.	T. and L. Pulleys.	Revs. per Minute.	Cubic Measurement.	Weight.	H. P. Required.	Code Word.
Fig. 117 —Four Sides	12 x 7	850	214	4,650	5 to 8	Genteel.
Fig. 117 A—Three Sides	12 x 7	850	.....	.....	.....	Gentry.
Fig. 117 B—Two Sides.....	12 x 7	850	.....	.....	.....	Genuine.
Fig. 117 C—One Side.....	12 x 7	850	.....	.....	.....	Geology.

Fig. 118.

WILLIAMSPORT MACHINE CO.'S

Ten-Inch Moulding Machine.



THE above cut illustrates our new and greatly improved Ten-Inch Four-Sided Moulding Machine, which embodies new improvements and superiority in construction that make it nearer perfection than any similar machine yet introduced. Main frame is one solid casting, making it firm and rigid. It will work stock, both sides, to 10 inches wide by 4 1/4 inches thick, and the bed will lower to 12 inches without disconnecting any links or gears.

All Chip Breakers and Pressure-Shoes can be set close to the heads or adjusted back so that each knife can extend to make a three-inch cut in depth.

The Feed is very powerful, consisting of four driven feed rolls 5 1/2 inches in diameter, operated by a set of perfect gearing, and the two top rolls are very heavily weighted. These can be easily raised for adjusting and setting up the machine for different kinds of work by the small lever at the top.

The Larger Lever, near the counter-shaft, will stop the feed immediately when desired.

Both Side Heads have a special feature; they being attached to the table, raise and lower with it, thus saving time in adjusting, and avoiding any irregular work caused by the tremble or jar of the machine.

The Side Heads can be set to any angle, and can be adjusted laterally or vertically if desired without changing the angle. All of the belts are long and powerful, and pull back to the bottom of the boxes instead of the caps.

The Heads are made of solid forged steel, four sides slotted, with large spindles running in long self-oiling boxes, which are very rigid. Every detail has been given careful attention, and

the machine is undoubtedly one that for durability and excellence of work cannot be surpassed by any similar tool offered to wood-workers to-day.

The Caps and Boxes on all spindles are planed true where the liners go in, thus making a true and flat surface. All the adjustments are precise and quick made, as the wrenches are attached. The machine has four changes of feed, ranging from 22 to 52 feet per minute.

Since above cut was made we have added a pressure-shoe between the two side heads, for the purpose of holding the stock down while being worked at that point.

Have provided the machine with our improved compensating spring-weight on pressure bar, to relieve the chip-breaker from jar. This is an important feature, inasmuch as it prevents friction, and in planing lumber that has been sawed roughly or that is uneven, it holds the pressure bar firmly upon the material, thus avoiding the troublesome vibrations that result in wavy or imperfect work.

The Spring is placed inside the weight and rests on the bar, so that it makes no difference at what point on the bar the weight is placed, the tension on spring is always the same.

We have also added a device for taking up the slack in top cylinder-head belt, the same being operated by means of a hand-wheel in easy access to operator.

Belts required are as follows: Top head, 15 feet 9 inches by 5 inches wide; bottom head, 22 feet 8 inches by 4 inches wide; outside head, 17 feet 5 inches by 3 1/2 inches wide; inside head, 18 feet 5 inches by 3 1/2 inches wide; feed belts, one 8 feet 7 inches by 3 inches wide, one 8 feet 1 inch by 3 inches wide, one 7 feet 3 inches by 3 inches wide.

Revs. per Minute.	Cubic Measurement.	Weight.	Code Word.
800	4,800	Gerund.

SIZE.	Tight and Loose Pulleys.
14 x 7

Fig. 118—To work 10 inches wide.

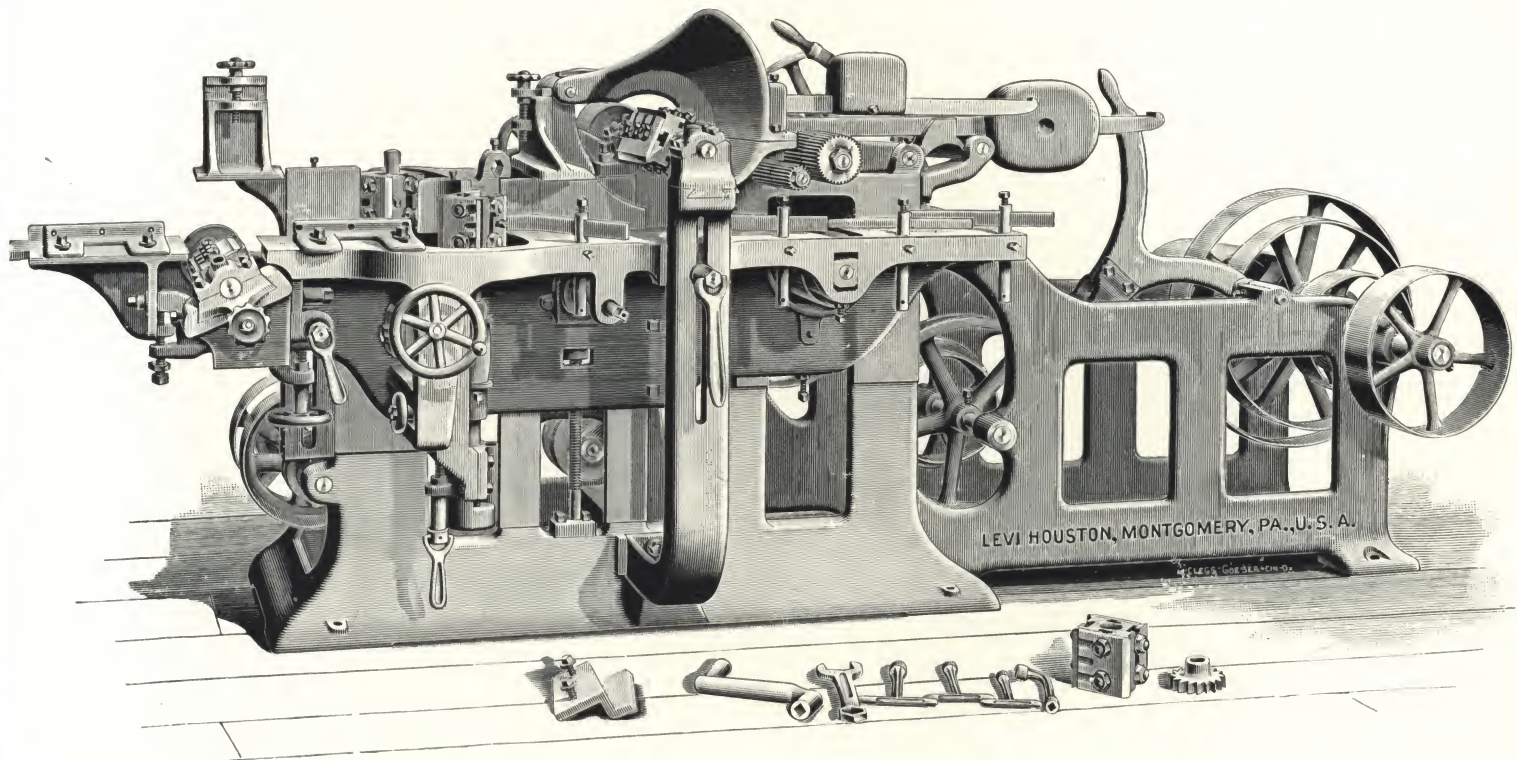
AMERICAN WOOD-WORKING MACHINE CO.

Fig. 119.

LEVI HOUSTON CO.'S

No. 2, Nine-Inch Four-Sided Moulder.

Ball Bearings to Raise Table.



THE accompanying cut represents our improved No. 2, 9-inch Four-Sided Moulder, which is adapted to all the finer grades of work usually done on expensive inside machines, and while it comprises all the advantages of an inside machine, it also has all the advantages of an outside or overhung machine. It is a well-known fact that an outside machine is much more convenient to change to different kinds of work and that an overhanging head will not do as good and perfect work as a head that has a solid bearing on each side of it.

One of the main features of this machine is the **solid outside bearing** for the top cutter-head shaft, bolted to both frame and table. The inside and outside headstocks are both adjustable and can be moved to any angle or position desired while the machine is in motion, with greater accuracy and speed than on any other machine. These side headstocks have long bearings on frame and table and the device for clamping them prevents all vibration and makes them like solid iron.

The machine is provided with **convenient lever device** to raise the feed rolls so the work may be pulled back out of the knives. The bolt that fastens the outside bearings to the table extends entirely through the table into the gib and clamps the table to the frame immediately beneath the top cutter-head, where it is most in need of a substantial support. The table is also clamped to frame between side heads and under cutter.

Side head belts pull against bottom of boxes.

The Feed is very strong and powerful, consisting of two upper rolls and one lower roll, all placed very near the top cutter-head, to hold the lumber firmly while being operated on. The large roll is placed directly over the under one, and the under roll is operated independently of the top rolls.

The Table in front of the under feed roll is planed one-eighth of an inch lower than the other parts of it to avoid friction, and to allow the lumber to be fed in on a line with the highest part of the table. When a table is planed straight it is necessary to set the under roll one-eighth of an inch above the surface. When this is done it raises the lumber that distance from the table and it must be bent back to a solid bearing before it reaches the top cutter-head; this requires a great deal of pressure on heavy work, and the heavier the pressure the more power is required to feed the lumber in.

The Under Head has lateral and vertical adjustments, and the machine is provided with adjustable throat plates on each side of under cutter. It has also an adjustable chip-breaker for the inside head.

It has a binder for feed works instead of a clutch, which will be found an advantage on heavy work.

The Heads are all four-side, **forged steel**, four-slotted. We furnish five heads and five sets of straight cutters with each four-sided machine. The machine will dress four inches thick on four sides, and the table will lower fifteen inches.

The following belts are required for a four-sided machine: One belt ten feet long, 2½ inches wide; one belt 10 feet 3 inches long, 3 inches wide; one belt 16 feet 8 inches long, 3 inches wide; one belt 20 feet 6 inches long, 3 inches wide; one belt 13 feet long, 2½ inches wide; one belt 15 feet 9 inches long, 4½ inches wide; one belt 17 feet 6 inches long, 3 inches wide; one belt 12 feet 8 inches long, 3 inches wide.

TO WORK.	T. and L. Pulleys.	Revs. per Minute.	Cubic Measurement.	Weight.	Code Word.
Fig. 119 —Four Sides.....	12 x 7	850	.....	3,500	Gesture.
Fig. 119 A—Three Sides.....	12 x 7	850	.....	3,500	Geyser.

AMERICAN WOOD-WORKING MACHINE CO.

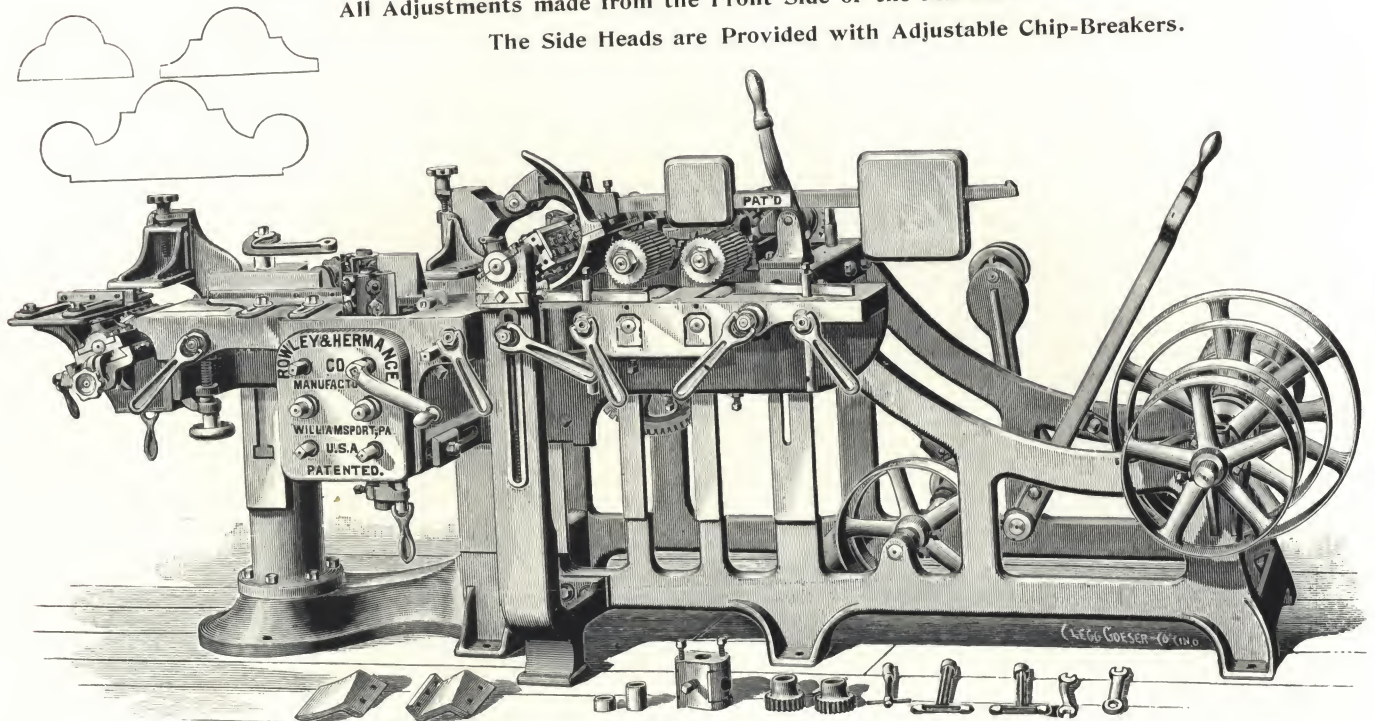
Fig. 120.

ROWLEY & HERMANCO CO.'S

New Column Eight-Inch Four-Sided Moulder.

All Adjustments made from the Front Side of the Machine.

The Side Heads are Provided with Adjustable Chip-Breakers.



Patented October 10, 1893, and January 23, 1894.

THIS cut represents our **New Column Eight-inch Four-Sided Moulder**, which is a very heavy and substantial machine built from new patterns. The frame is cast in one piece, designed to give the greatest strength and solidity.

The Boxes are long, lined with the best genuine babbitt, and the journals are accurately fitted to them.

It has four feed rolls, two above and two below, each 4 inches diameter; all driven by the most powerful system of gearing. The top rolls raise parallel with the table and bear their full weight evenly on all parts of the work, whether wide or narrow, thus insuring a strong, positive and steady feed at all times. They are also raised and lowered by a lever for placing a form to set the knives. The feed works are started and stopped with a binder. It has three rates of feed, viz: 32, 45 and 60 lineal feet per minute. All the working parts are easily and quickly adjusted from the front or working side of the machine, and as they are not complicated they are not liable to get out of order.

The Table is firmly gibbed to the frame, and securely fastened with three bolts fitted with swivel wrenches.

The Top Arbor is provided with an outside bearing, which extends to the floor and forms an additional support.

The Top Head has a lateral adjustment; the **bottom head** has a lateral and vertical adjustment. It has an **adjustable tightener** for the belt that drives the top head, by which the slack can be instantly taken up, or in running light work the strain can be taken from the belt.

Both the inside and outside heads have vertical, angular and horizontal adjustments, and raise and lower with the bed. Both of these heads have adjustable chip-breakers. There is ample space about all the heads to admit of using large cutters.

Our patent **Compensating Spring** is placed under the weight bar to relieve the chip-breaker from jar. This is a **new** and very **important** feature, as it prevents friction, and in planing roughly sawed or uneven lumber, holds the chip-breaker firmly upon the material and causes it to ride smoothly over the rough projections, thus avoiding wavy or imperfect work; and the pressure of the chip-breaker is always the same.

The Arbors are of the best steel, very heavy, with extraordinarily long boxes, and all belts pull against the bottom of the boxes.

The Spring Posts are held in position with our new improved clamp bolt with swivel wrench attached.

It will dress 8 inches wide by 3½ inches thick on four sides, and the table will lower 12 inches.

We furnish with each machine one set (2) straight knives for each of the four heads, one extra cap head, one extra feed pulley, two extra feed spurs, two extra pressure shoes, two collars and all the necessary wrenches.

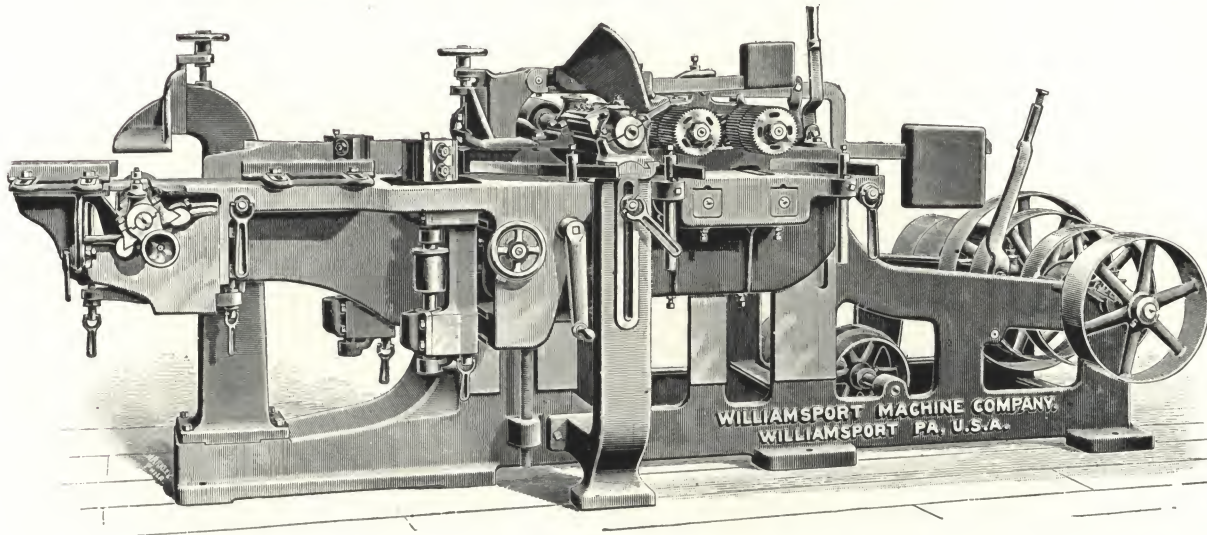
	Tight and Loose Pulleys.	Revs. per Minute.	Cubic Measure.	Approximate Weight.	Average H. P. Required.	Code Word.
TO WORK						
Fig. 120 —Four Sides.....	10 x 5	900	144	3,000	5 to 6	Giant.
Fig. 120 A—Three Sides.....	10 x 5	900	.....	.....	4 to 5	Gibbet.
Fig. 120 B—Two Sides.....	10 x 5	900	.....	.....	3 to 4	Giddy.
Fig. 120 C—One Side.....	10 x 5	900	.....	.....	3 to 4	Gifted.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 121.

WILLIAMSPORT MACHINE CO.'S

Eight-Inch Moulding Machine.



THE above cut illustrates our new and greatly improved Eight-Inch Four-Sided Moulding Machine, which embodies new improvements and superiority in construction that make it nearer perfection than any similar machine yet introduced.

This machine is the heaviest Eight-Inch Moulder on the market, and the entire main frame is one solid casting, making it firm and rigid. It will work stock both sides to eight inches wide by four and one-quarter inches thick, and the bed will lower to fourteen inches without disconnecting any links or gears.

All Chip-Breakers and pressure shoes can be set close to the heads or adjusted back so that each knife can extend to make a $2\frac{1}{2}$ -inch cut in depth.

The Feed is very powerful, consisting of four driven feed rolls four inches in diameter, operated by a set of perfect gearing, and the two top rolls are very heavily weighted. These can be easily raised for adjusting and setting up the machine for different kinds of work by the small lever at the top.

The Larger Lever near the counter-shaft will stop the feed immediately when desired.

Both Side Heads have a special feature; they being attached to the table, raise and lower with it, thus saving time in adjusting and avoiding any irregular work caused by the tremble or jar of the machine.

The Side Heads can be set to any angle, and can be adjusted laterally or vertically, if desired, without changing the angle. All of the belts are long and powerful, and pull back to the bottom of the boxes instead of the caps.

The Caps and Boxes on all spindles are planed true where the liners go in, thus making a true and flat surface. All the adjustments are precise and quickly made, as the wrenches are attached. The machine has four changes of feed, ranging from twenty-two to fifty-two feet per minute. The heads are made of solid forged steel, four sides slotted, with large spindles running in long self-oiling boxes, which are very rigid.

Every detail has been given careful attention, and the machine is undoubtedly one that for durability and excellence of work cannot be surpassed by any similar tool offered to woodworkers to-day.

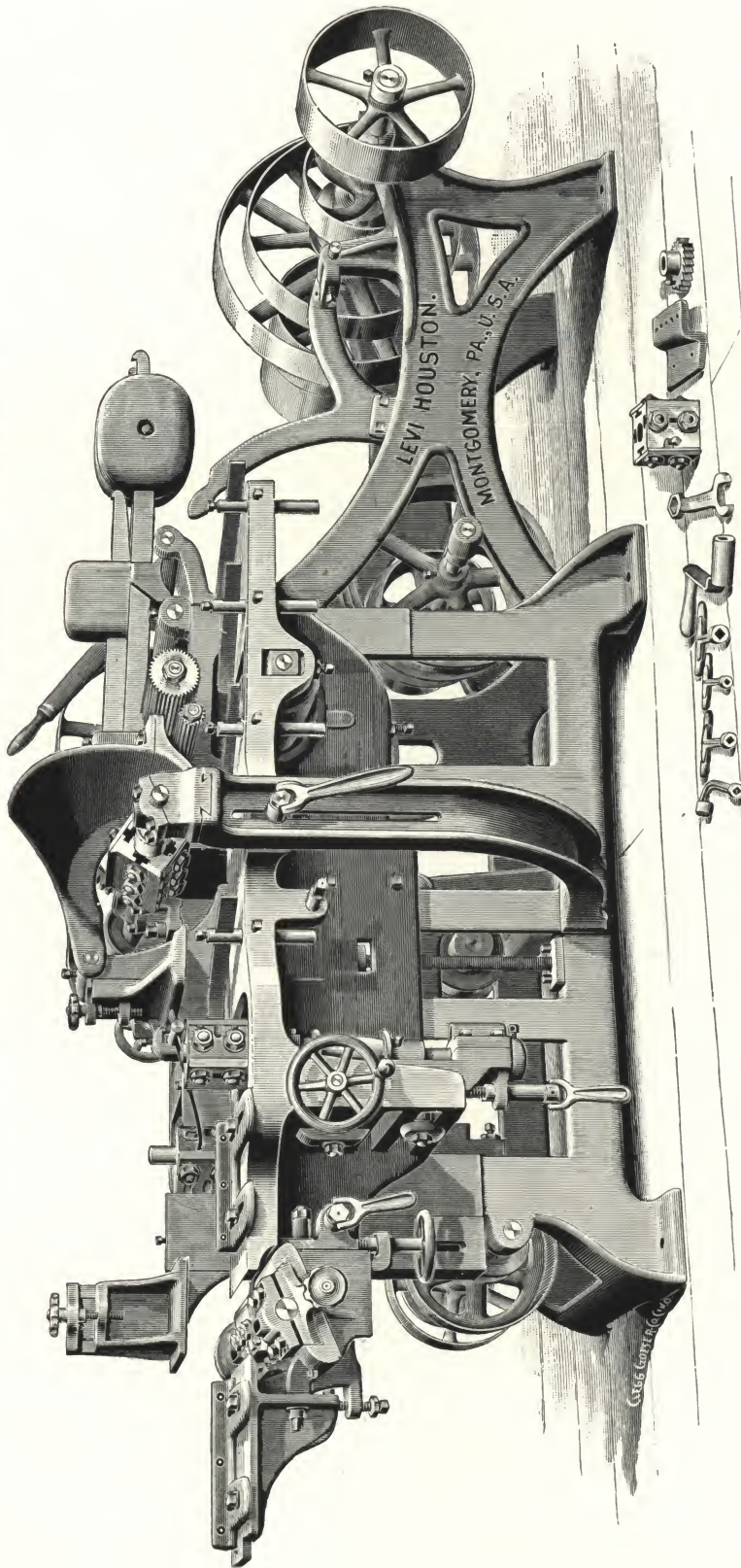
Since above cut was made, we have added a **pressure-shoe** between the **two side heads**, for the purpose of holding the stock down while being worked at this point; have provided the machine with our improved compensating spring-weight on pressure bar to relieve the chip-breaker from jar. This is an important feature, inasmuch as it prevents friction, and in planing lumber that has been sawed roughly or that is uneven, it holds the pressure bar firmly upon the material, thus avoiding the troublesome vibrations that result in wavy or imperfect work. The spring is placed inside of the weight and rests on the bar, so that it makes no difference at what point on the bar the weight is placed, the tension on the spring is always the same.

We have also added a device for taking up the **slack in top cylinder-head belt**, the same being operated by means of a hand-wheel in easy access to the operator.

Belts required are as follows: Top head, 14 feet 3 inches by $4\frac{1}{2}$ inches wide; bottom head, 20 feet 6 inches by 3 inches wide; inside head, 16 feet 8 inches by $2\frac{1}{2}$ inches wide; outside head, 15 feet 9 inches by $2\frac{1}{2}$ inches wide; feed belts, one 8 feet 8 inches by $2\frac{1}{2}$ inches wide; one 6 feet 6 inches by $2\frac{1}{2}$ inches wide.

TO WORK	T. and L. Pulleys.	Revs. Per Minute.	Floor Space Required.	Weight.	Code Word.
Fig. 121 —Four Sides.....	10 x 5	820	12 ft. 8 in. by 5 ft. 2 in.	3,500	Gigot.
Fig. 121 A—Three Sides.....	10 x 5	820	12 ft. 8 in. by 5 ft. 2 in.	3,500	Giraffe.
Fig. 121 B—Two Sides.....	10 x 5	820	12 ft. 8 in. by 5 ft. 2 in.	3,500	Girdless.
Fig. 121 C—One Side.....	10 x 5	820	12 ft. 8 in. by 5 ft. 2 in.	3,500	Gimcrack.

Fig. 122.
LEVI HOUSTON CO.'S
New Eight-Inch Four-Sided Moulder.



BALL BEARINGS TO RAISE TABLE.

THIS machine is strong and rigid, well constructed and capable of doing a variety of work in first-class manner. **The Journal Boxes** are on an incline and lined with genuine babbit metal.

One of the main features on this machine is the **solid outside bearing** for the top cutter-head shaft, bolted to both frame and table; there are other valuable improvements on this machine which make it the best in the market for planing and working mouldings up to its full capacity; as well as to work perfectly the smallest mouldings.

The Inside and Outside Headstocks are both adjustable, and can be moved to any angle or position desired, while the machine is in motion, with greater accuracy and speed than on any other machine. These side headstocks have long bearings on frame and table, and the device for clamping them prevents all vibration and makes them like solid iron. **The Gibs** that hold the table to the frame extend the whole width of the table, and the face of the frame is planed, so as to allow them to slide entirely to the top of it, thus holding the table very firmly. **The Bolt** that fastens the **outside bearing** to the table extends entirely through the table into the gib, and clamps the table to the frame immediately beneath the top cutter-head, where it is most in need of a substantial support.

The Feed is very strong and powerful, consisting of two upper rolls and one lower roll, and placed very near the top cutter-head, to hold the lumber firmly while being operated on. The feed works are provided with a **lever device** to raise the rolls up off the material when desired.

The Under Cutter has lateral and vertical adjustments, and is provided with throat plates on both sides.

The Inside Head has Adjustable Chip-Breaker. The binder for feed-works is in easy access to operator. The heads are all forged steel, four-slotted.

The following Belts are required for a Four-Sided Machine: One belt 10 feet long, 2½ inches wide; one belt 13 feet long, 2½ inches wide; one belt 15 feet 9 inches long, 4½ inches wide; one belt 16 feet 8 inches long, 3 inches wide; one belt 20 feet 6 inches long, 3 inches wide; one belt 12 feet 8 inches long, 3 inches wide.

TO WORK

	T. & L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 122 — Four Sides	12 x 7	850	3,200	Gilder.
Fig. 122 A—Three Sides	12 x 7	850	3,200	Gimlet.
Fig. 122 B—Two Sides	12 x 7	850	3,200	Gipsy.
Fig. 122 C—One Side	12 x 7	850	3,200	Girdle.

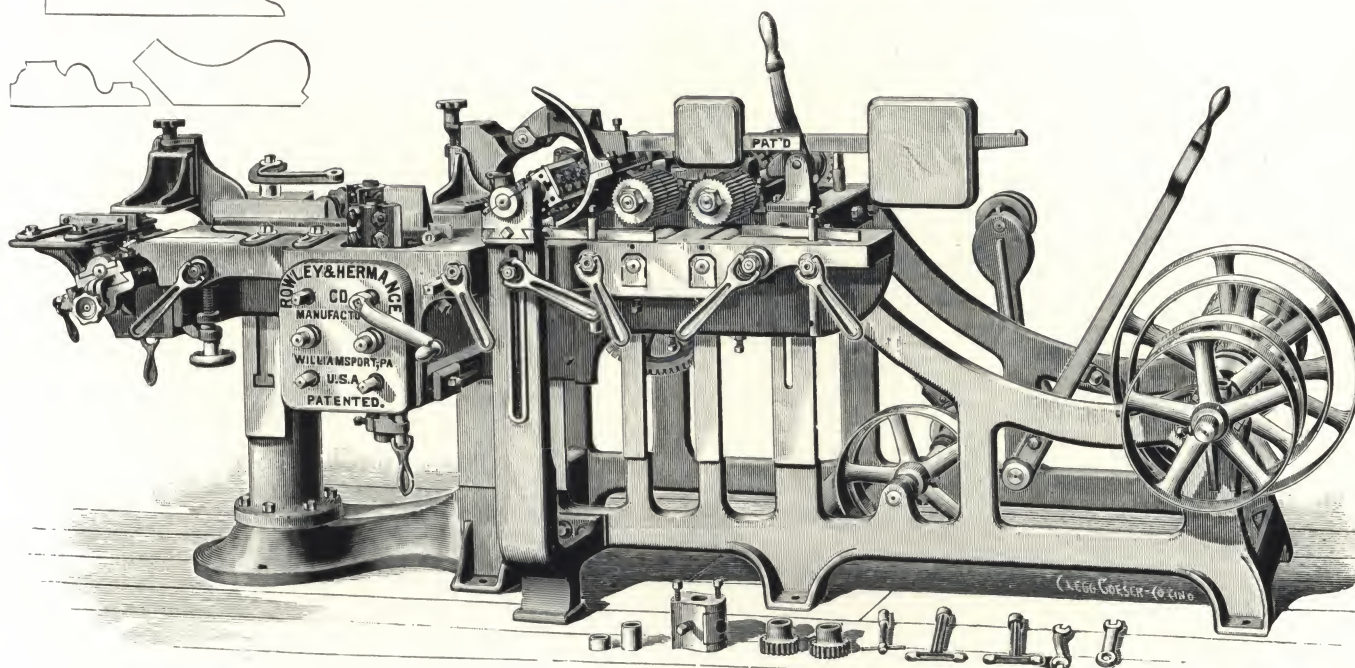
AMERICAN WOOD-WORKING MACHINE CO.

Fig. 123.

ROWLEY & HERMAN CO.'S

New Column Seven-Inch Four-Sided Moulder.

All Adjustments Made From the Front Side of the Machine.



Patented October 10, 1893, and January 23, 1894.

OUR New Column Seven-Inch Four Side Moulder is the heaviest and most substantial machine of its kind on the market and contains improvements that are not found on any other make of Seven-Inch Moulders.

The Frame is cast in one piece, this being very essential, as it prevents it from twisting and keeps the bearings at all times in line. **The Boxes** are extra long and lined with the best genuine babbitt and the journals accurately fitted to them.

The machine has **Four Feed Rolls**, two above and two below, each 4 inches in diameter, all driven by the most powerful system of gearing.

The Top Rolls raise parallel with the table and bear their full weight evenly on all parts of the work either in the working of wide or narrow stock. It has the strongest and most powerful feed of any Seven-Inch Moulder on the market. The feed works are raised and lowered by a lever for placing a form to set the knives. The machine is provided with three rates of feed, 32, 45 and 60 lineal feet per minute.

The Feed works are started and stopped with a binder. The table is fitted to the frame with gibs and securely fastened with bolts with swivel wrench attached.

The Top Arbor has an outside bearing which extends to the floor and forms an additional support.

The Under Head in rear of the machine is supported with a heavy solid column.

The Top Head has a lateral adjustment while the bottom head has a lateral and vertical adjustment. There is an adjustable tightener provided for the belt that drives the top head by which the slack can be instantly taken up or in running light work the strain can be taken from the belt.

The Inside and Outside Heads are attached to the bed and raise and lower with it, they have a vertical, angular and horizontal adjustment and are provided with adjustable chip-breakers. There is ample space around all the heads to admit using large cutters.

Our Patent Compensating Spring is placed under the weight bar to relieve the chip-breaker from jar. This is an important feature as it prevents friction and in planing roughly sawed lumber it holds the chip-breaker firmly upon the material and causes it to ride smoothly over the rough projections; thus producing much smoother work than can be done on any other moulder as the pressure of the chip-breaker is always the same.

The Spring Posts are held in position with our new improved clamp bolt with swivel wrench attached. The arbors are of the best steel, extra heavy and all the belts pull against the bottom of the boxes.

It will plane 7 inches wide by 3½ inches thick on all four sides and the table will lower twelve inches.

We furnish with each machine one set (2) straight knives for each of the four heads, one extra cap head, one extra feed pulley, two extra feed spurs, two extra pressure shoes, two collars and all the necessary wrenches.

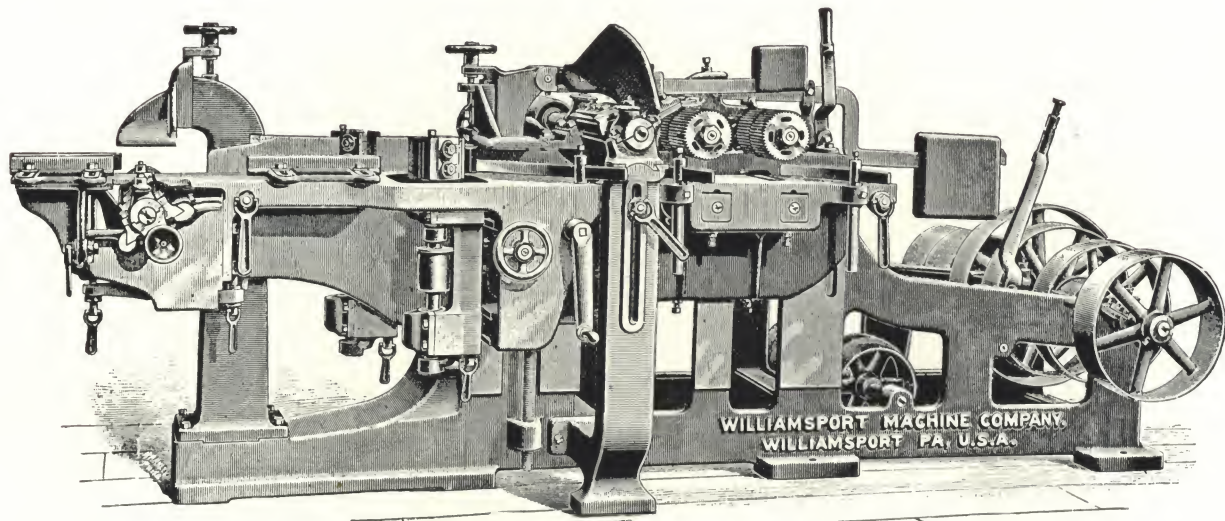
TO WORK.	T. and L. Pulleys.	Revs. per Minute.	Cubic Measurement.	Approximate Weight.	Average H. P. Required.	Code Word.
Fig. 123 —Four Sides	10 x 4½	900	138	2,800	4 to 6	Girlish.
Fig. 123 A—Three Sides.....	10 x 4½	900	.....	.....	3 to 5	Gizzard.
Fig. 123 B—Two Sides.....	10 x 4½	900	.....	.....	3	Gladden.
Fig. 123 C—One Side.....	10 x 4½	900	.....	.....	2	Glanced.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 124.

WILLIAMSPORT MACHINE CO.'S

New Seven-Inch Moulding Machine.



THE above cut illustrates our new and greatly improved Seven-Inch Four-Sided Moulding Machine, which embodies new improvements and superiority in construction that make it nearer perfection than any similar machine yet introduced.

This machine is the heaviest Seven-Inch Moulder on the market, and the entire main frame is **one solid casting**, making it firm and rigid. It will work stock both sides to seven inches wide by four and one-quarter inches thick and the bed will lower to fourteen inches without disconnecting any links or gears.

All Chip-Breakers and pressure shoes can be set close to the heads or adjusted back so that each knife can extend to make a two-and-one-half-inch cut in depth.

The Feed is very powerful, consisting of four driven feed rolls four inches in diameter, operated by a set of perfect gearing and the two top rolls are very heavily weighted. These can be easily raised for adjusting and setting up the machine for different kinds of work, by the small lever at the top, which, with the larger lever near the countershaft will stop the feed immediately when desired.

Both Side Heads have a special feature; they being attached to the table, raise and lower with it, thus saving time in adjusting and avoiding any irregular work caused by the tremble or jar of the machine.

The Side Heads can be set to any angle and can be adjusted laterally or vertically if desired without changing the angle. All of the belts are long and powerful and pull back to the bottom of the boxes instead of the caps.

The Caps and Boxes on all spindles are planed true where the liners go in, thus making a true and flat surface. All the adjustments are precise and quickly made, as the wrenches are attached. The machine has four changes of feed, ranging from twenty-two to fifty-two feet per minute.

The Heads are made of **solid forged steel**, four sides slotted, with large spindles running in long self-oiling boxes, which are very rigid.

Since above cut was made we have added a **pressure-shoe** between the two side heads, for the purpose of holding the stock down while being worked at this point; have provided the machine with our improved compensating spring-weight on pressure bar, to relieve the chip-breaker from jar. This is an important feature inasmuch as it prevents friction, and in planing lumber that has been sawed roughly or that is uneven, it holds the pressure bar firmly upon the material, thus avoiding the troublesome vibrations that result in wavy or imperfect work. The spring is placed inside of the weight and rests on the bar, so that it makes no difference at what point on the bar the weight is placed, the tension on the spring is always the same.

We have also added a device for taking up the **slack in top cylinder-head belt**, the same being operated by means of a hand-wheel in easy access to the operator.

Every detail has been given careful attention and the machine is undoubtedly one that for durability and excellence of work cannot be surpassed by any similar tool offered to wood-workers to-day.

Belts required are as follows: Top head, 14 feet 3 inches by 4½ inches wide; bottom head, 20 feet 6 inches by 3 inches wide; inside head, 16 feet 8 inches by 2½ inches wide; outside head, 15 feet 9 inches by 2½ inches wide. Feed belts: One 8 feet 8 inches by 2½ inches wide; one 6 feet 6 inches by 2½ inches wide. Floor space required, 12 feet 8 inches by 5 feet 2 inches.

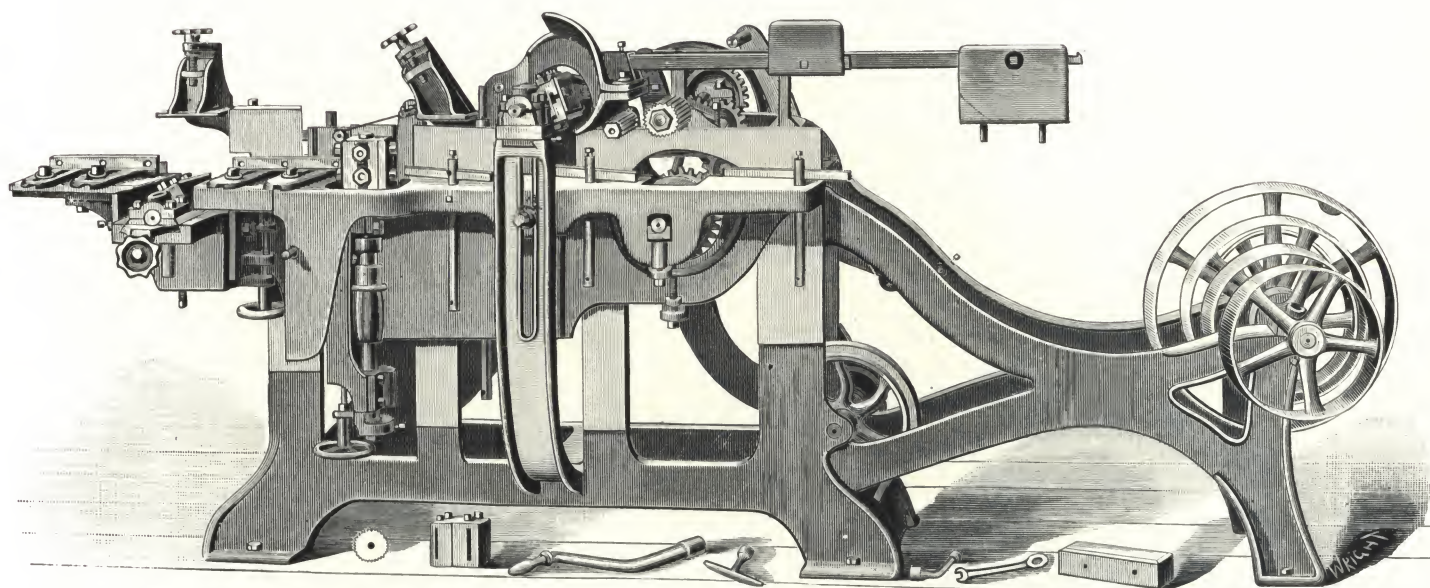
TO WORK.	T. and L. Pulleys.	Revs. per Minute.	Weight.	H. P. Required.	Code Word.
Fig. 124 —Four Sides.....	10 x 5	820	3,200	6 to 8	Glaring.
Fig. 124 A—Three Sides.....	10 x 5	820	3,200	.....	Glareous.
Fig. 124 B—Two Sides.....	10 x 5	820	3,200	.....	Gleaning.
Fig. 124 C—One Side.....	10 x 5	820	3,200	.....	Glebaus.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 125.

LEVI HOUSTON CO.'S

No. 2, Seven-Inch Four-Sided Moulder.



WE take pleasure in presenting this machine to the market, and beg to call attention to some of the important points of excellence over other 7-inch Moulders. The first is the solid outside bearing for the top cutter-head shaft, and which also acts as a support to the table. It is bolted to the frame below the table, the bolt extending through it into the gib that holds the table to the frame, thus clamping the frame, table and outside bearings securely together, making them like solid iron. The upper part of the outside bearing is dovetailed into the main standard, and can be readily removed for changing heads on top mandrel. To avoid friction, the table is planed lower in front of under-roll than any other part of it, and to allow the work to be fed in on a line with the table under the top cutter-head.

The Adjustable Chip-Breaker for the inside head will be found very useful, as one side of the lumber must be worked against the grain.

The inside and outside headstocks can be set to any angle and fastened, and then be moved in and out or up and down accurately without changing the angle.

The Top Head has lateral adjustment of one inch across the frame.

The Under Cutter is adjustable vertically and horizontally. There is a slide fitted in the table on each side of the under cutter-head, so as to open to allow cutters to be stuck through the face of the table, and these slides also act as chip-breakers for the under cutter.

The Feed on this machine is very strong and powerful, consisting of one lower and two upper rolls, all driven. The one upper roll is weighted and the other held firmly by springs. There is a connection from the feed counter-shaft to the stud of the feed pulley, which acts as an outside bearing for the stud and takes the strain off the belt. Side spindles run on patent self-oiling steps.

This machine has a binder for feed works instead of a clutch, which will be found much better.

We furnish five steel heads and four sets cutters with each four-sided machine. Four heads are four-sided, four-slotted, and the extra head is a solid cap head.

Belts required: One belt 12 feet 10 inches long, 3½ inches wide; one belt 14 feet 1 inch long, 2½ inches wide; one belt 7 feet 1 inch long, 2½ inches wide; one belt 16 feet 4 inches long, 2½ inches wide; one belt 13 feet 4 inches long, 2½ inches wide; one belt 7 feet 10 inches long, 1½ inches wide.

TO WORK	T. and L. Pulleys.	Revs. per Min.	Weight.	Code Word.
Fig. 125 —Four Sides.....	10½ x 5	900	1,800	Glazier.
Fig. 125 A—Three Sides.....	10½ x 5	900	1,800	Gleeful.
Fig. 125 B—Two Sides.....	10½ x 5	900	1,800	Gliding.
Fig. 125 C—One Side.....	10½ x 5	900	1,800	Glimpse.

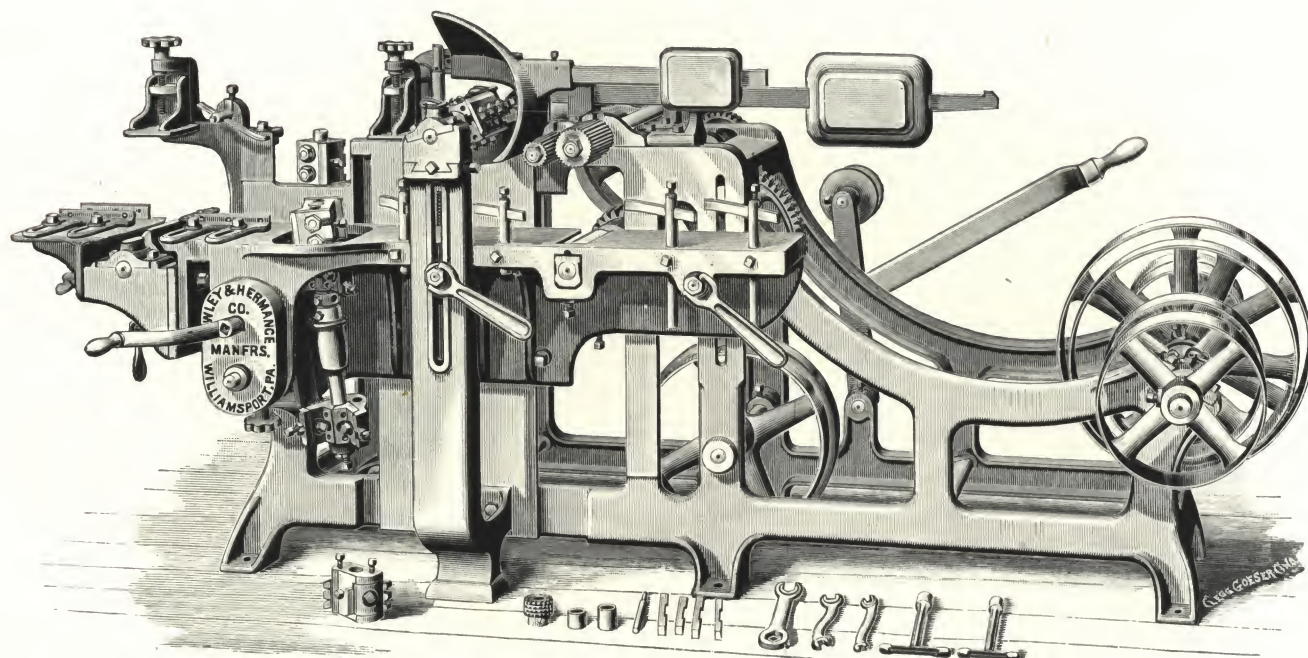
AMERICAN WOOD-WORKING MACHINE CO.

Fig. 126.

ROWLEY & HERMAN CO.'S

New Pattern Six-Inch Four-Sided Moulder.

With Outside Bearing Extending to the Floor.



THIS Machine represented by this cut is entirely new in design, and has many valuable improvements; in fact, we have used every possible means to overcome faults in other moulders and make this the best 6-inch machine in the market.

The **Frame** is one solid casting, so designed as to fully withstand all stress occasioned by belts and working parts, and no part of the machine is contracted or crowded, there being ample space for belts, and heads carrying long knives, and at the same time allowing all parts to be easily and quickly adjusted, there being no hidden screws or nuts.

It is provided with **two upper** and one **lower feed rolls**, all driven by a system of gearing which has no superior, the motion being steady and strong regardless of the position of the table, there being no occasion to disconnect the gear when the table is lowered to the full capacity of the machine. It is simple and not liable to get out of order, and is controlled by a **tightener** placed in a convenient position.

The **Arbors** are of large diameter, running in long boxes provided with large oil space. The **top arbor** is provided with an **outside bearing**, which extends to the floor and is bolted to the base of the frame; thus forming an additional support. The **top** and **bottom heads** may be adjusted laterally, and the side heads have a vertical and angular adjustment. The **top rolls** and hood over the top head are weighted, and heads are provided with **chip-breakers** and **pressure shoes**.

The **Table** may be raised and lowered to a depth of 14 inches by means of a crank over the table, as shown in cut. We furnish one top head, four-slotted; one bottom and two side heads, two-slotted; all of steel, and one extra loose cap head, one extra spur feed roll, and necessary wrenches, with each Four-Sided Machine.

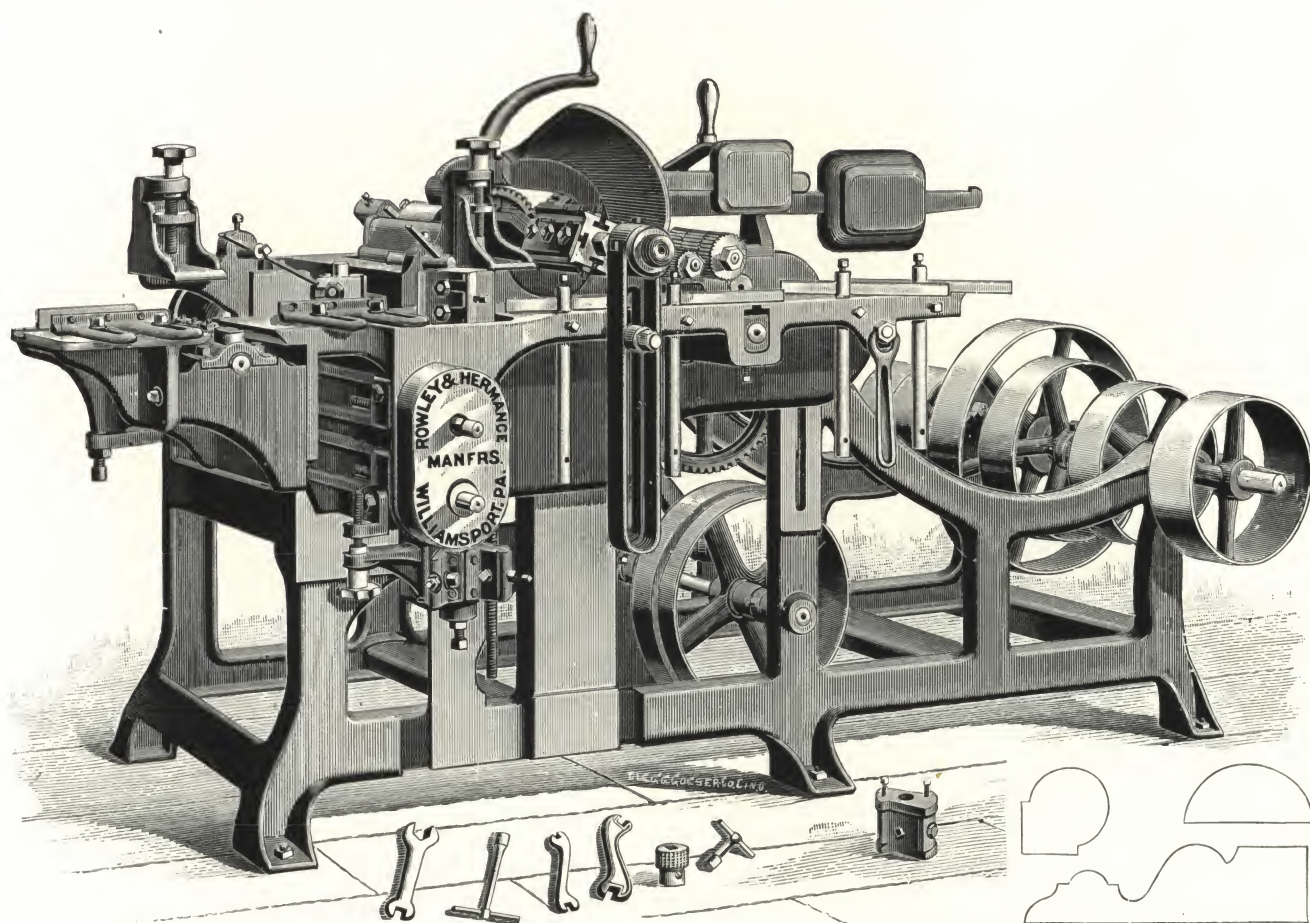
TO WORK.	T. and L. Pulleys.	Revs. per Minute.	Cubic Measurement.	Approximate Weight.	Average H. P. Required.	Code Word.
Fig. 126 —Four Sides.....	10 x 4½	900	110	1,700	3 to 5	Glitter.
Fig. 126 A—Three Sides.....	10 x 4½	900	.....	.....	3 to 4	Globe
Fig. 126 B—Two Sides.....	10 x 4½	900	.....	.....	2 to 3	Glove.
Fig. 126 C—One Side.....	10 x 4½	900	.....	.....	2	Gluten.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 127.

ROWLEY & HERMANCO CO.'S

Six-Inch Four-Sided Moulder.



With Removable Outside Bearing Bolted to the Table.

THIS machine is often used as a sticker in door and furniture factories, and while the outside bearing is used for making mouldings, it is sometimes more convenient to remove it for grooving the edges of wide pieces, or when the machine is used for general work; for this reason we furnish the machine with a removable outside bearing.

This machine is built in the same manner as our heavy Six-inch Moulder, shown and described on page 136.

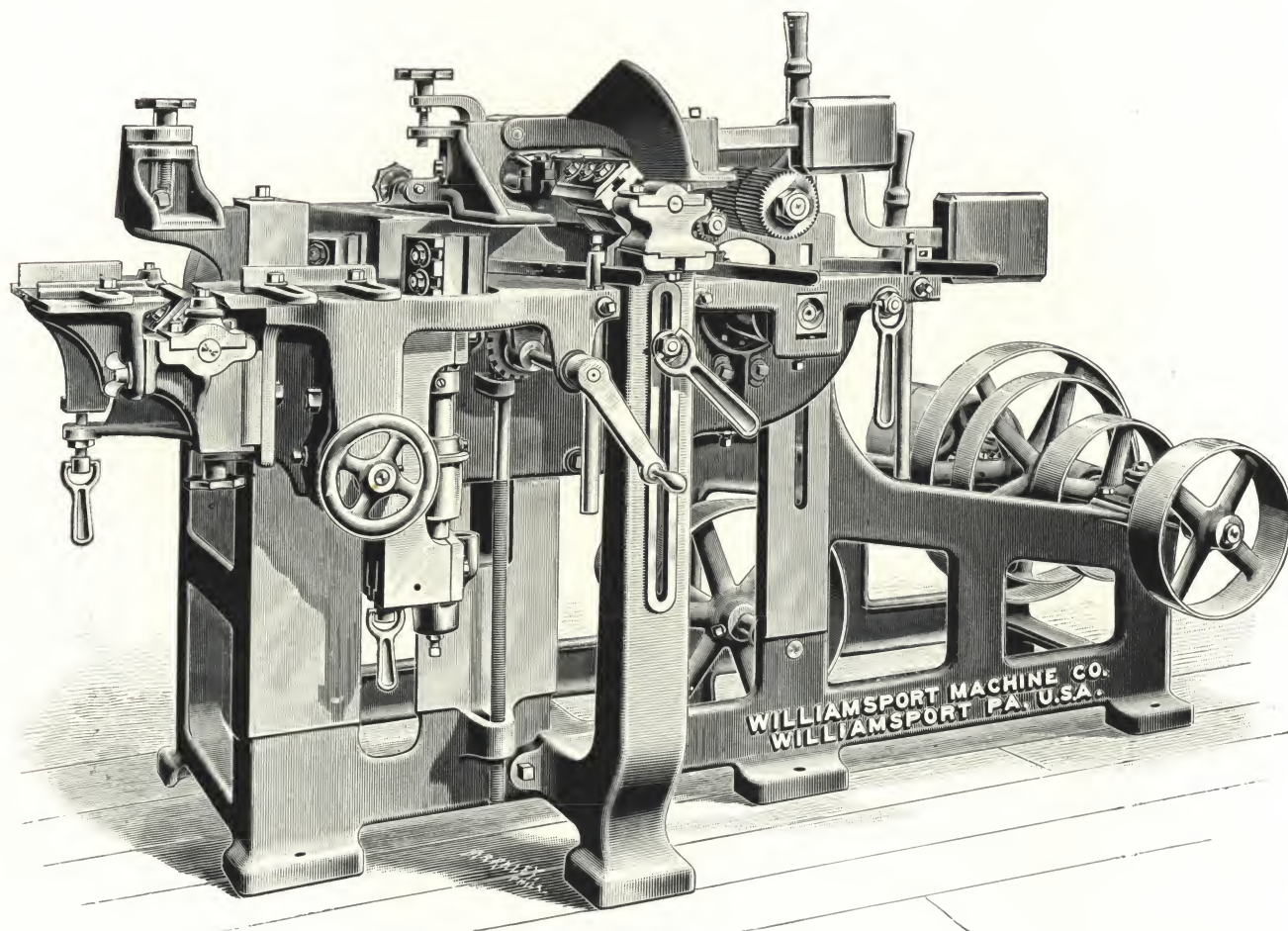
TO WORK	Tight and Loose Pulleys.	Revs. per Minute.	Cubic Measurement.	Approximate Weight.	Average H. P. Required.	Code Word.
Fig. 127 —Four Sides	10 x 4½	900	110	1,600	3 to 5	Gobble.
Fig. 127 A—Three Sides	10 x 4½	900	.....	.....	3 to 4	Goblin.
Fig. 127 B—Two Sides.....	10 x 4½	900	.....	.....	2 to 3	Goddess.
Fig. 127 C—One Side.....	10 x 4½	900	.....	1,225	2	Godlike.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 128.

WILLIAMSPORT MACHINE CO.'S

Six-Inch Moulder.



TO complete our line of new Moulders, we have placed on the market a new and greatly improved Six-Inch Machine as shown, which, owing to its weight, superior construction and new features, strongly recommends itself to practical wood-workers.

The Frame of this machine is in **one solid casting**, and the extension of the outside bearing of the top head down to the floor adds additional strength to this particular point, which is usually so weak.

Three driven **feed rolls** are provided, the two top ones being very heavily weighted. These can be raised from the work by the lever shown at the top of the machine.

The Table is substantially locked to the frame in two places, and will drop to about sixteen inches.

The Outside Head can be set at any angle, and adjusted laterally or vertically without changing the angle.

Ample **chip-breakers** and **pressure shoes** are provided, which are adjustable, the under head having a chip-breaker on both sides of it. These are dovetailed into the table, making them perfectly rigid when set as desired.

The material in the construction of this Moulder is so disposed as to give the greatest possible strength; provision is made for taking up the wear in a superior manner wherever needed, and all the wrenches are attached, greatly facilitating the adjusting for different work.

Belts required are as follows: 1 belt 11 feet 4 inches by $3\frac{1}{2}$ inches wide; 1 belt 14 feet 2 inches long by $2\frac{1}{4}$ inches wide; 1 belt 11 feet 2 inches long by $2\frac{1}{4}$ inches wide; 1 belt 11 feet 8 inches long by $2\frac{1}{4}$ inches wide; 1 belt 7 feet 7 inches long by 2 inches wide; 1 belt 7 feet 2 inches long by $2\frac{1}{4}$ inches wide.

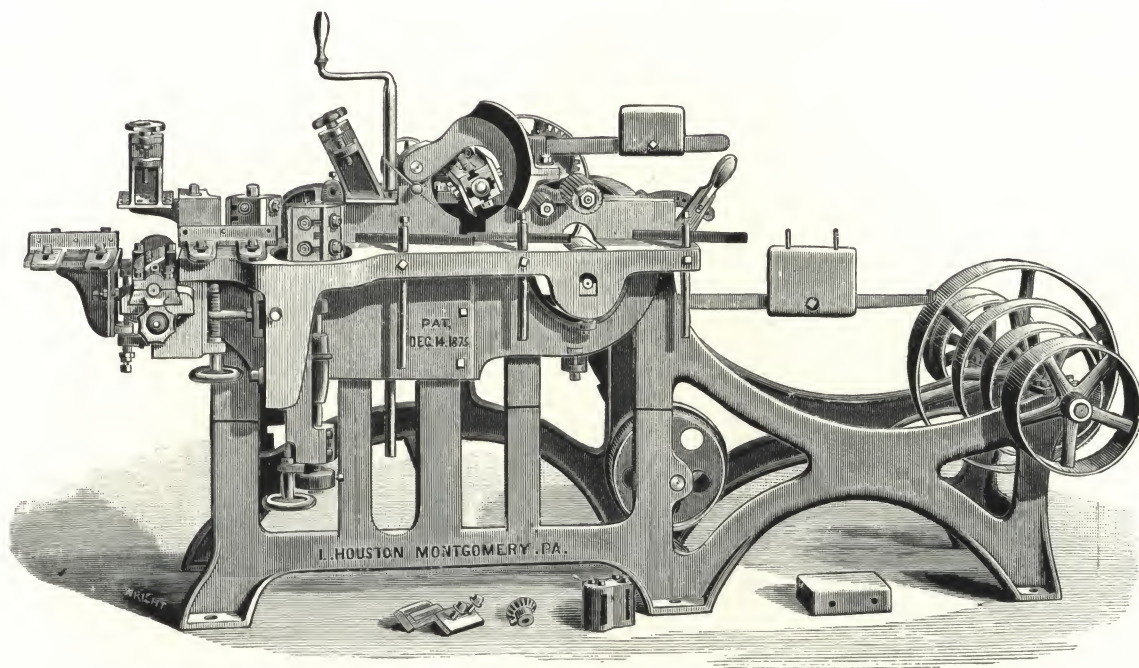
	TO WORK	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 128	—Four Sides	10 x 4	900	1,800	Gondola.
Fig. 128 A	—Three Sides	10 x 4	900	1,800	Goldlace.
Fig. 128 B	—Two Sides	10 x 4	900	1,800	Goloshes.
Fig. 128 C	—One Side	10 x 4	900	1,800	Goodliness.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 129.

LEVI HOUSTON CO.'S

No. 2, Six-Inch Four-Side Moulder.



THIS machine is designed for sticking mouldings up to 6 inches wide, and working material into various shapes within the scope of a 6-inch Moulder.

The Frame is cast in one piece ; is strong, rigid and well braced. Extra heavy steel mandrels are used with extra long bearings.

The Top Head has lateral adjustment of one inch ; the **under head** has lateral and vertical adjustments ; **both inside and outside heads may be set to an angle** and adjusted vertically or horizontally without disturbing the angle. The feed works are powerful, consisting of two upper driven rolls and one idle roll in the bed. Four rates of feed are provided for.

The Table will lower 15 inches ; **the tail-piece** to bed is hinged and swings out from under head to give access to cutters. There are adjustable throat plates on each side of under head.

The Feed Belt binder is in convenient position for operator. The side spindles run on **patent self-oiling steps**.

With each four-sided machine we furnish **four steel four-slotted heads** with one pair of straight bits on each, and one extra steel cap or sash head ; all necessary springs, wrenches, spur feed and filling-up collars.

Belts Required : One belt 12 feet 9 inches long, $3\frac{1}{2}$ inches wide ; one belt 16 feet 3 inches long, $2\frac{1}{2}$ inches wide ; one belt 13 feet 11 inches long, $2\frac{1}{2}$ inches wide ; one belt 13 feet 2 inches long, $2\frac{1}{2}$ inches wide ; one belt 7 feet long, $2\frac{1}{2}$ inches wide ; one belt 8 feet 1 inch long, $1\frac{1}{2}$ inches wide.

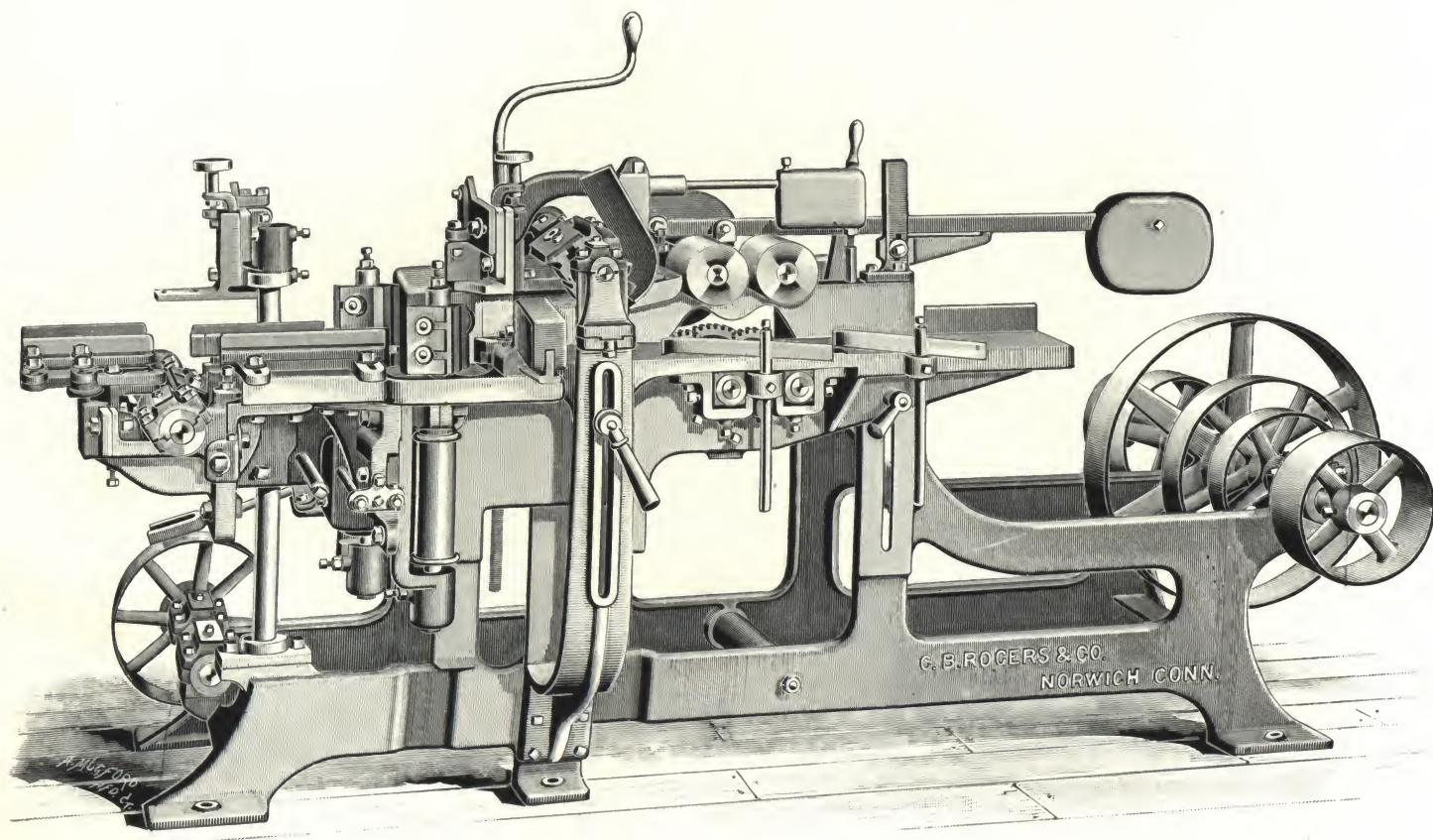
TO WORK.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 129 —Four Sides	$10\frac{1}{2} \times 5$	900	1,500	Goodly.
Fig. 129 A—Three Sides	$10\frac{1}{2} \times 5$	900	1,500	Gosling.
Fig. 129 B—Two Sides	$10\frac{1}{2} \times 5$	900	1,500	Gospel.
Fig. 129 C—One side	$10\frac{1}{2} \times 5$	900	1,500	Gouty.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 130.

C. B. ROGERS & CO.'S

Six-Inch B. Outside Moulder.



THIS machine is built to meet the demand for a high class outside moulder. It is thoroughly well made and carefully finished; has every necessary and convenient adjustment, and is giving universal satisfaction.

The Heads are all of same diameter of swing, take the same knife and bolt; top and bottom head have lateral adjustment, and side spindles may be tilted in either direction.

All Pressures are adjustable and swing up clear of the bed, for convenience in setting up; the end of the bed swings down to admit of easy access to lower head.

The Feed is exceptionally strong, there being four large rolls, all geared, and driven by belt from top spindle; the gearing is compounded to cause but slight strain of belt; feed is stopped and started by shifting on tight and loose pulleys.

The bed drops to 14 inches without disconnecting lower rolls, and is well supported at lower head by means of wrought posts.

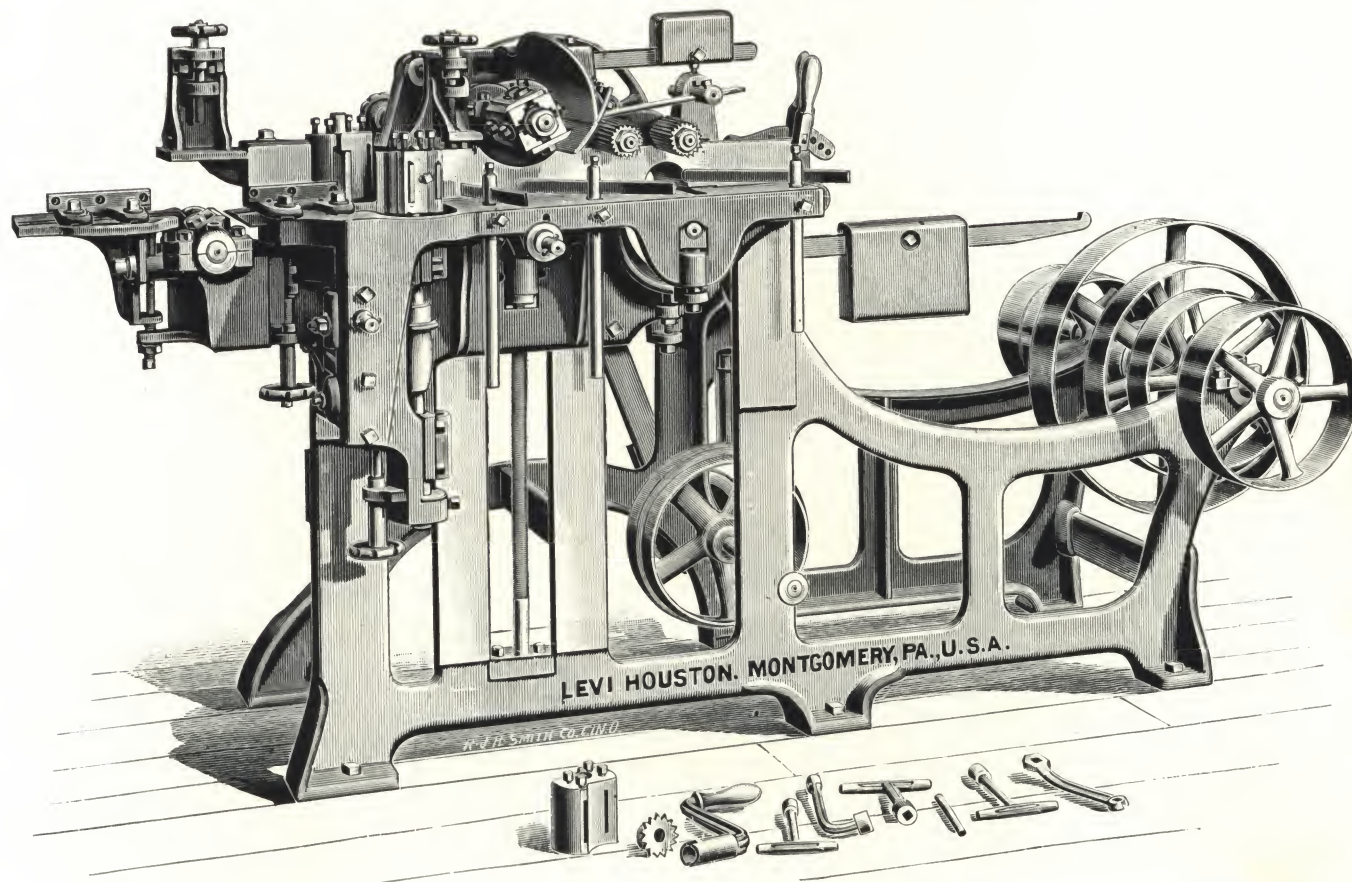
TO WORK	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 130 —Four Sides	10 x 5	900	2,000	Gradual.
Fig. 130 A—Three Sides	10 x 5	900	2,000	Grafted.
Fig. 130 B—Two Sides.....	10 x 5	900	2,000	Grained.
Fig. 130 C—One Side	10 x 5	900	2,000	Grange.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 131.

LEVI HOUSTON CO.'S

New Four-Inch Four-Sided Moulder.



ABOVE cut represents our newly designed and improved Four-inch Moulder, especially adapted to work small mouldings, beads, trunk slats and sash, and is not excelled for running blind slats.

The Frame is cast in one solid piece, strong, rigid and well braced at every point subject to any strain.

The Feed Works are strong and reliable, consisting of two upper steel fluted rolls and one large friction roll in the bed; the feed works are controlled by a well arranged binder in easy access to operator.

The Table will lower twenty inches, and the mandrels are all made up of the very best steel and run in boxes lined with genuine babbitt metal.

The Side Spindles run on patent self-oiling steps. The under cutter has vertical adjustment and is provided with a substantial pressure foot. There is also a pressure foot directly in rear of top head.

The Outside Headstock is clamped to table at two points, may be thrown to any angle, adjusted horizontally or vertically, without disturbing the angle. The hood over top head is adjustable to and from the knives and is also provided with adjustable steel plates that may be set up to the very cutting edge of the knives.

The above points, with many others clearly shown in the cut, make this a most desirable sticker for light work. It is decidedly modern and convenient in design and construction.

We furnish five heads and four sets of cutters with each four-sided machine; also a full set of wrenches, springs, etc.

The Belts required are as follows: One belt 11 feet 8 inches long, 3 inches wide; one belt 13 feet 7 inches long, 2 inches wide; one belt 11 feet 5 inches long, 2 inches wide; one belt 11 feet 1 inch long, 2 inches wide; one belt 7 feet 6 inches long, 2 1/2 inches wide; one belt 7 feet 7 inches long, 1 1/2 inch wide.

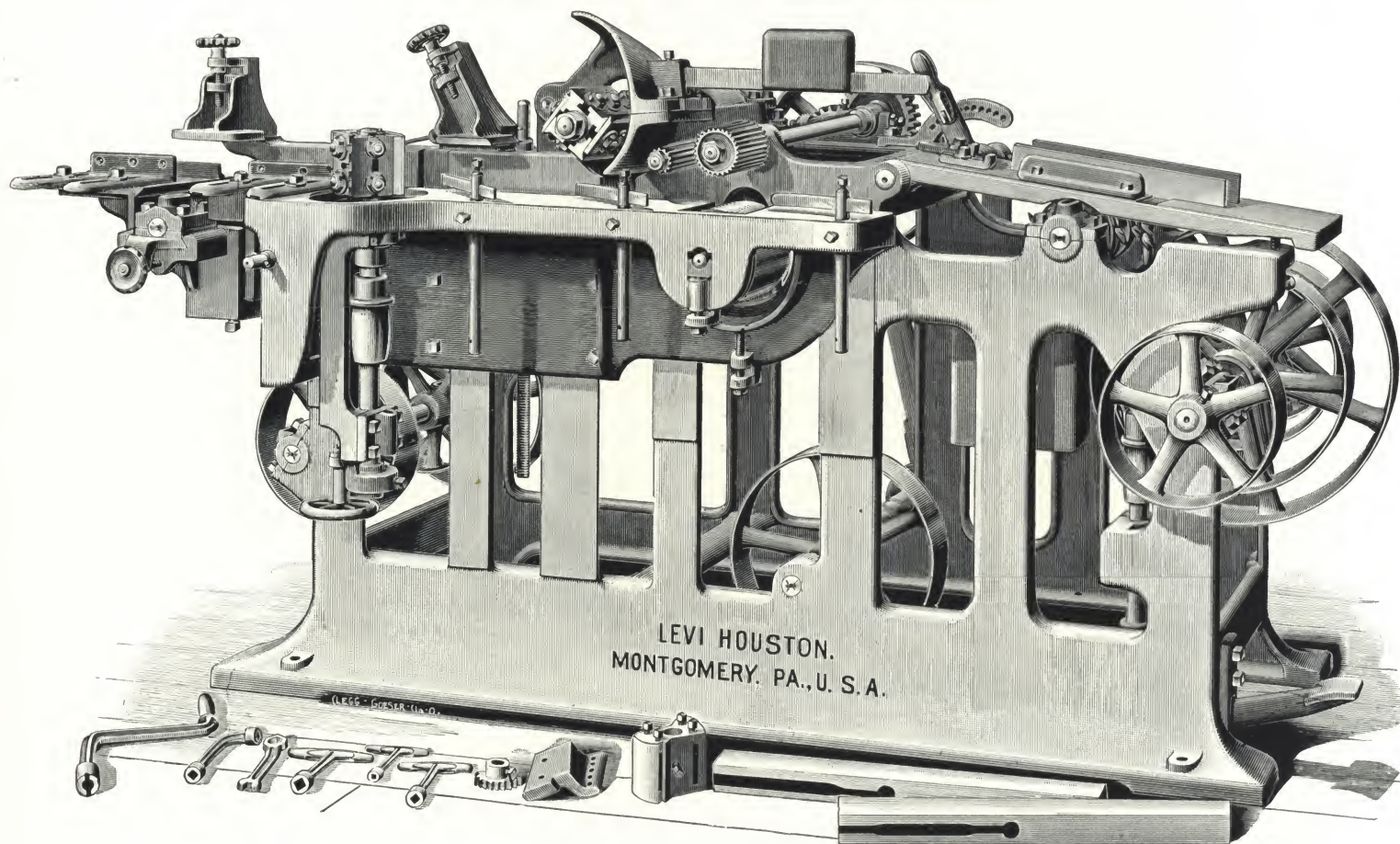
TO WORK	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 131 —Four Sides	10 x 4	900	1,000	Grasp.
Fig. 131 A—Three Sides	10 x 4	900	1,000	Gratify.
Fig. 131 B—Two Sides.....	10 x 4	900	1,000	Gravely.
Fig. 131 C—One Side.....	10 x 4	900	1,000	Greedy.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 132.

LEVI HOUSTON CO.'S New Six-Inch Sash Sticker.

With Boring and Double Grooving Attachment.



THIS Machine is designed to run sash stiles making a continuous wide and narrow groove by placing the sash stile on the table of the grooving attachment at front end of the machine, and pushing it up to the first stop, then the operator puts his foot on the treadle attached to the boring spindle and bores the hole on an incline to receive the knot of the sash cord, which pulls to the bottom of the hole when the weight is attached. He then runs the stile over the right-hand grooving head to the stop, cutting the narrow groove to the hole bored. The stile is then run through the machine cutting the glass rabbet and moulding. To do this requires only the top head on the machine with the grooving and boring attachment, but when the machine is fitted with the outside and under heads in addition to the above, as shown in the cut, the machine is capable of running the check or meeting rails and muntins also.

The Outside Headstock has vertical and horizontal adjustments and may be set on an angle.

The Under Head also has vertical and horizontal adjustments. **The Top head** has lateral adjustment.

The Feed works consist of two upper fluted steel rolls strongly driven, and one friction roll in bed.

The Feed works are controlled by a convenient binder and the machine is provided with two adjustable pressure shoes, all necessary wrenches, springs and one extra sash head and a removable outside bearing for top head, attached to table, not shown in above cut.

The Table over grooving attachment is hinged and is adjustable to cut a shallow or deep groove as desired, and the guides adjustable to suit the thickness of the material. The machine is strong, rigid and built from the very best of material and is guaranteed to be first-class in every particular. Side spindle runs on patent self-oiling step.

Belts Required: Top head, 10 feet 3 inches, by 3½ inches wide; under head, 13 feet 8 inches, by 2½ inches wide; outside head, 10 feet 10 inches, by 2½ inches wide; boring spindle, 12 feet, by 2½ inches wide; rear counter, 13 feet 9 inches, by 2½ inches wide; grooving head, 12 feet 2 inches, by 2½ inches wide; feed, 7 feet 4 inches, by 2½ inches wide; feed 7 feet 7 inches, by 1½ inches wide,

TO WORK.

	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 132 —Three Sides, with Double Grooving and Boring Attachment	10½ x 5	900	1,800	Greenish.
Fig. 132 A—Two Sides, with Double Grooving and Boring Attachment	10½ x 5	900	1,800	Greeting.
Fig. 132 B—One Side, with Double Grooving and Boring Attachment	10½ x 5	900	1,800	Griffin.

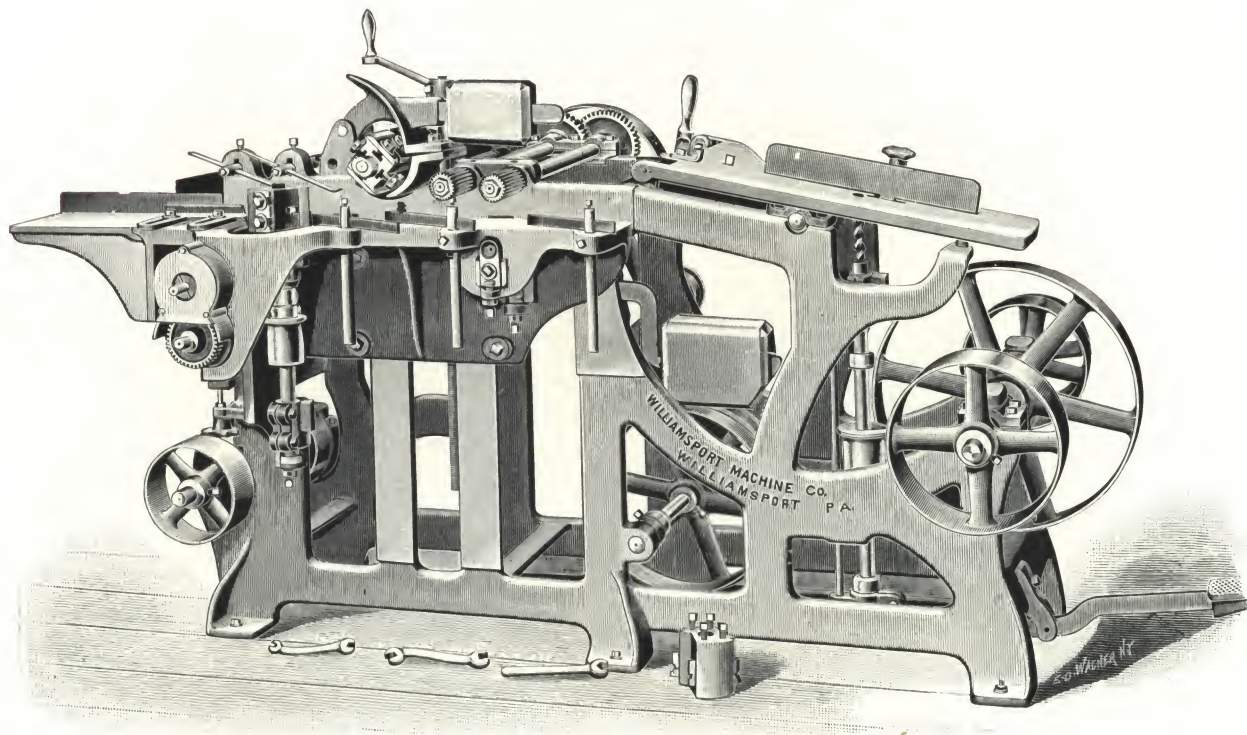
AMERICAN WOOD-WORKING MACHINE CO.

Fig. 133.

WILLIAMSPORT MACHINE CO.'S

New Two-Headed Sash Sticker.

With Plowing and Boring Attachment.



FOR rapid work in making sash we have designed the above machine, which has many features to attract the modern sash maker. By having an **outside head** on a machine of this kind, check rails of sash and similar work can be finished by once passing through the machine, whereas on the ordinary Sash Sticker it requires two operations.

The Frame of this machine is cast in one solid piece, well finished at every point, and so constructed as to be very durable and rigid. The grooving and boring of the stile is quickly done, the stile being placed on the grooving table and pushed forward to the first stop; then by pressing the foot on the treadle, the hole for sash cord is bored and this action drops the first stop down out of the way, and releasing the treadle brings the boring spindle back into position, and the stile is pushed forward to the second stop, completing the groove, and the stile is then ready to be passed through the machine. The operator has ample time to bore and groove a stile while one is passing through the machine.

The machine has two **Fluted Top Feed Rolls**, both driven, and a friction roll in the table.

The Top Rolls are held down by a lever and weight, which makes an even pressure on the stock. The table can be lowered to 16 inches.

With each machine we furnish a four-slotted steel head for the top arbor, a two-slotted one for the side spindle and a set of straight knives for each, an extra sash head with one set of sash bits, a seven-eighths inch auger bit, set of plow bits and a full set of wrenches.

The machine can be used as a sash, door and blind sticker, as neither the outside head nor the plowing and boring attachment interferes with the other working parts of the machine.

Belts required are as follows: Top head, 11 feet 3 inches by 3½ inches wide. Side head, 10 feet 7 inches by 2¼ inches wide. Sub-counter-shaft, 13 feet by 2½ inches wide. Boring spindle, 9 feet 9 inches by 2¼ inches wide. Grooving, 10 feet 2 inches by 2¼ inches wide. Feed belts, one 7 feet by 2¼ inches wide, and one 7 feet 4 inches by 2 inches wide.

Floor space required, 6 feet 10 inches by 3 feet 4 inches.

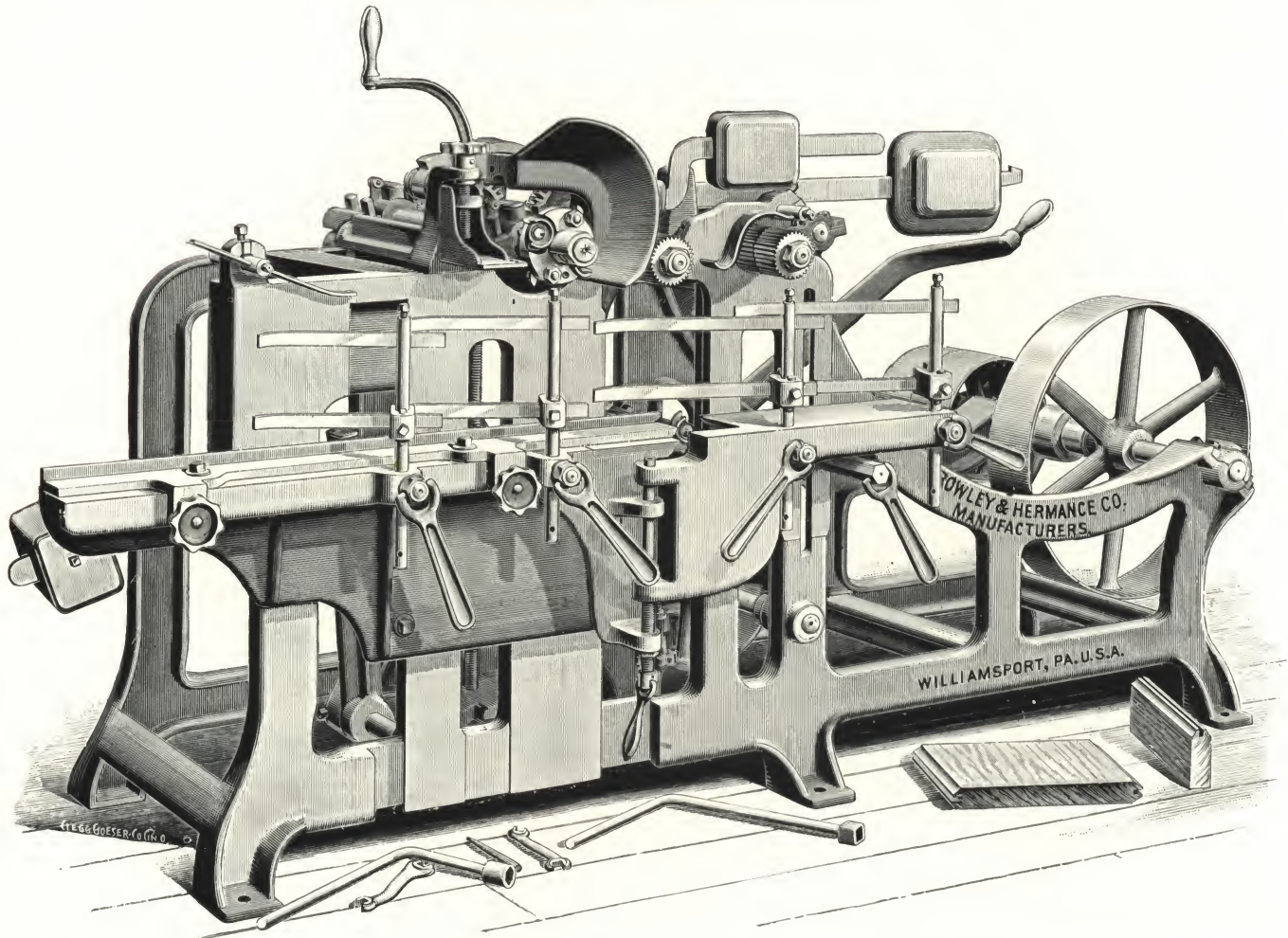
	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 133—Two-head Sash Sticker, Plowing and Boring Attachment,	10 x 4	900	1,400	Grigon.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 134.

ROWLEY & HERMANCO CO.'S No. 5 Double Door Sticker.

With Bottom Head Placed in Front.



THIS machine has been designed and built from entirely new patterns, and embodies improvements not found on any other machine for Sticking Stiles and Rails for Doors and Sash. It will be found a most excellent machine, and is strongly recommended for working both edges of door rails and muntins, and sash bars and muntins or for working one edge and joining the other at one operation. **The Frame** is cast in one solid piece, well braced.

The Table is gibbed to the frame, the gib extending the whole depth of the table; it is raised and lowered by the crank on top of the machine. **The Table** will drop down to 14 inches.

The Feed Rolls are two in number, and are driven by a powerful system of gearing. The rolls are provided with weight to give them the proper pressure on the stock being worked.

Another feature to which we call attention is the **lower head which is placed in front**; thus working the bottom part of the rail or stile first. The groove made in the rail is received by an adjustable table placed on the main bed and directly back of the under head; thus giving a perfect surface and bearing while being operated upon by the top cutter-head. This extra table can be removed when the under head is used for jointing; this feature alone recommends this machine to all door manufacturers as being the only practical way to work the top and bottom of the rail and stile successfully at one operation.

The Top and Bottom Heads have lateral adjustments, and the groove can be run in center of any thickness.

The Bottom Head has a **lateral** and **vertical adjustment**. The front of the table is so arranged that it can be swung out of the way of the under cutter-head, giving the operator free access to the head. The hood and chip-breaker is adjustable to and from the top cutter-head.

A close examination of the cut will show you that the machine is designed throughout to meet all the requirements of a Door Sticker, and being one of the latest improved machines of its kind, it should have your careful consideration.

It has four rates of feed, viz.: 20, 25, 30 and 35 lineal feet per minute. There is a binder for the feed belt instead of a clutch, giving the operator full control over his work.

Each machine is furnished with two (Shimer) O. G. Door Heads, with one set each of O. G. door cutters and the necessary wrenches.

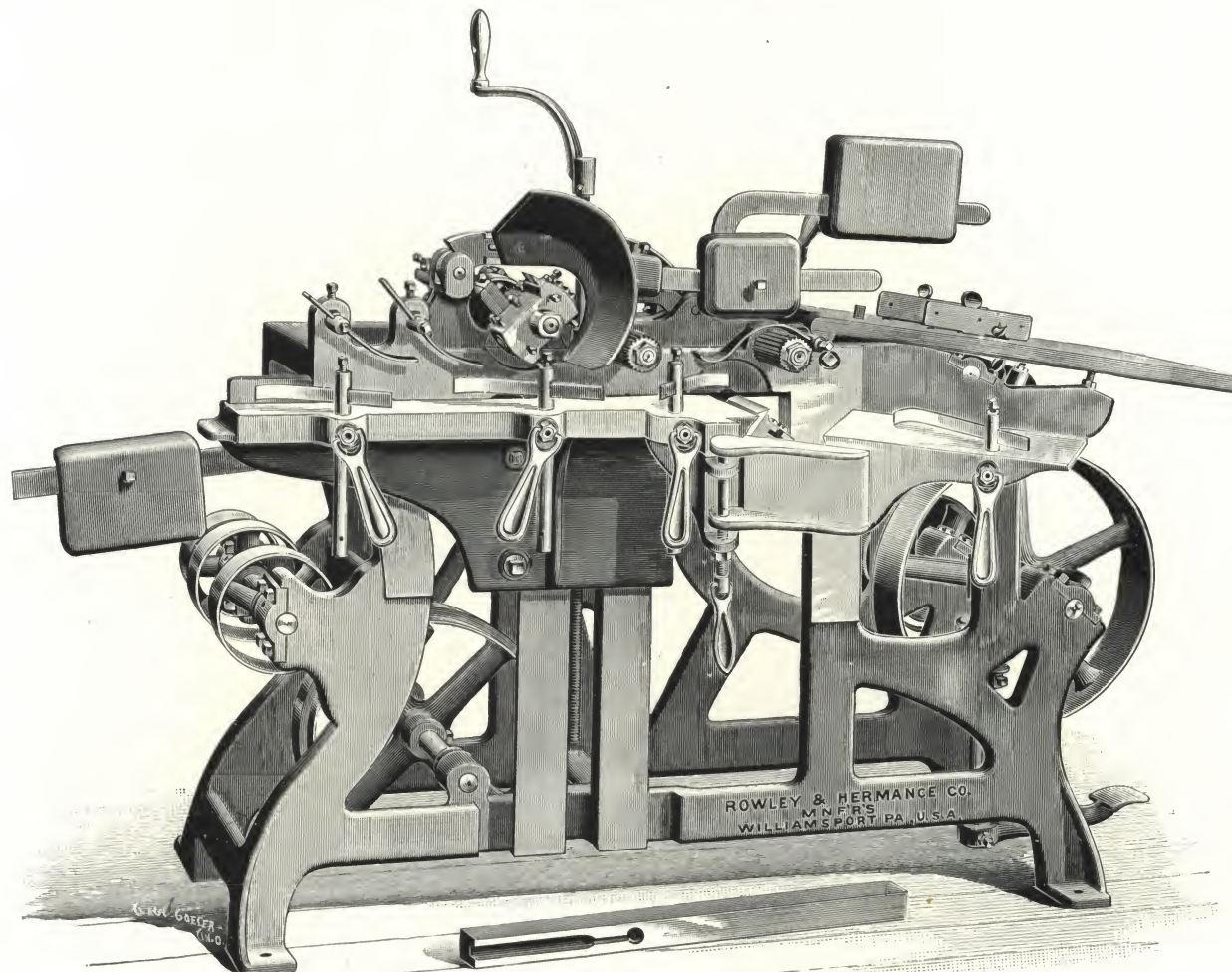
STYLE.	T. and L. Pulleys.	Revs. per Minute.	Cubic Measurement.	Approximate Weight.	Average H. P. Required.	Code Word.
Fig. 134—No. 5, with Top and Bottom Heads, (Bottom Head, Placed in Front), Including Two Shimer O. G. Door Heads	10 x 4½	900	110	1,100	1 to 3	Grillage.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 135.

ROWLEY & HERMANCO CO.'S No. 3 Sash Sticking Machine.

With Bottom Head Placed in Front.



THE illustration represents our special No. 3 Sash Sticking Machine, with the bottom head placed in front, and has been designed for the purpose of working both edges of Stiles, Bars and Muntins of sash in one operation as it passes through the machine.

One of the features of this machine, to which we call attention, is that the lower head is placed in front; thus working the bottom edge of the stiles, bars and muntins first. It joints the stock and works the moulding, giving a perfect bearing on the bed while being operated upon by the top cutter-head; thus making a smoother surface. This feature alone recommends the machine to all sash manufacturers.

The Bottom Head has a lateral and vertical adjustment, and the table in front of it is so arranged that it can be swung out of the way giving free access to the head.

An attachment for boring and grooving sash stiles can be furnished for this machine when desired; either for the continuous wide and narrow groove as shown on the sample at the base of the machine, or with the single plowing and boring attachment. This attachment is shown in the cut, but is furnished only when ordered and at additional price.

This machine is built to work one, two or three sides, as ordered; and can be used for general work as the Boring and Grooving Attachment is not in the way.

When built as a three-side machine, the outside side-head is used. This head will bevel the check rail, thus finishing the check rail at one operation.

We furnish with each machine, one cap head on top arbor, one set of sash cutters for same, one two-slotted head on bottom arbor, one set (2) jointing knives and necessary wrenches. When the attachment is ordered for making the wide and narrow groove, we furnish with it two Shimer Grooving Heads with grooving cutters, one $\frac{7}{8}$ inch boring bit. For the single width of groove, one plain grooving head, one set (2) straight grooving cutters and one $\frac{7}{8}$ inch boring bit.

	TO WORK.	Tight and Loose Pulleys.	Revs. per Minute.	Cubic Measurement.	Approximate Weight.	Average H. P. Required.	Code Word.
Fig. 135	—No. 3, with Top and Bottom Heads, (Bottom Head placed in front). Without Boring and Grooving Attachments.....	10 x 4½	900	72	1,300	1 to 2	Grimace.
Fig. 135A	—No. 3, with Top, Bottom and Outside Heads, (Bottom Head placed in front). Without Boring and Grooving Attachments..	10 x 4½	900	72	1,450	1 to 3	Grinders.
Fig. 135B	—No. 3, with Top and Bottom Heads, (Bottom Head placed in front). Including Boring and Double Grooving Attachment for making the Continuous Wide and Narrow Groove.....	10 x 4½	900	72	1,450	1 to 2	Gripper.
Fig. 135C	—No. 3, with Top, Bottom and Outside Heads, (Bottom Head placed in front). Including Boring and Double Grooving Attachment for making the Continuous Wide and Narrow Groove....	10 x 4½	900	72	1,600	1 to 3	Grizzle.

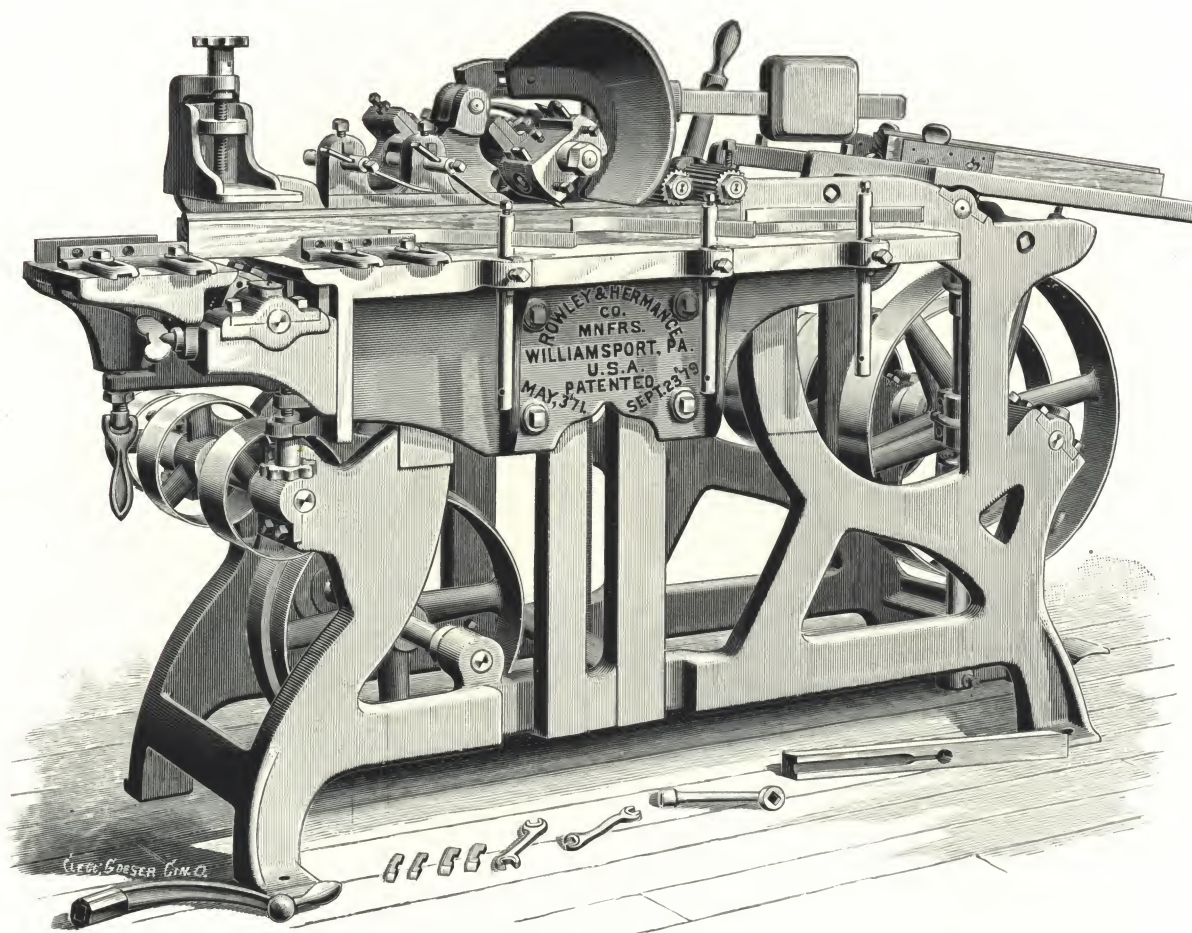
AMERICAN WOOD-WORKING MACHINE CO.

Fig. 136.

ROWLEY & HERMAN CO.'S

No. 2 Sash Sticking Machine.

With Attachment for Boring and Making a Continuous Wide and Narrow Groove,
as Shown by the Stile at Base of Machine.



THIS cut shows our New Sash Sticker, with Improved Attachment for Boring and Grooving the sash stile at one operation as it passes through the machine.

The operator places the stile on the grooving table and pushes it forward against the first stop, making the wide groove; then by pressing the foot on the treadle the bit bores the stile at an angle so the knot in the cord will draw toward the bottom of the hole when the weight is attached, and by removing the foot the bit drops down out of the way and the stile is placed over the small grooving head and forward against the second stop, completing the groove as shown on the sample at the base of the machine. The stile is then placed under the feed rolls and run through the machine. The grooving and boring is quickly done, and a boy can operate it, having ample time to plow and bore a short stile while another is being fed through the machine.

This machine is built to work **one, two or three sides**, as ordered; the one-sided machine can be used as a sash, door or blind sticker, as the attachment is not in the way. **The Bed** drops 16 inches.

The **two-sided machine**, with top and bottom heads, sticks the moulding and joints the back of sash stile for stenciling the size of sash at one operation. It also finishes sash muntins on both sides at one passing through.

When built as a **three-sided machine**, the outside side head is used. This head will bevel the check rail, thus finishing the check rail at one operation.

We furnish with each machine, one cap head on arbor, one set sash cutters for same, one two-slotted head on bottom arbor, one set (2) jointing cutters, two Shimer patent grooving heads, with grooving cutters, one $\frac{7}{8}$ inch boring bit and the necessary wrenches.

The Arbors are of steel, and run in our patent three-part "**Common Sense**" journal box.

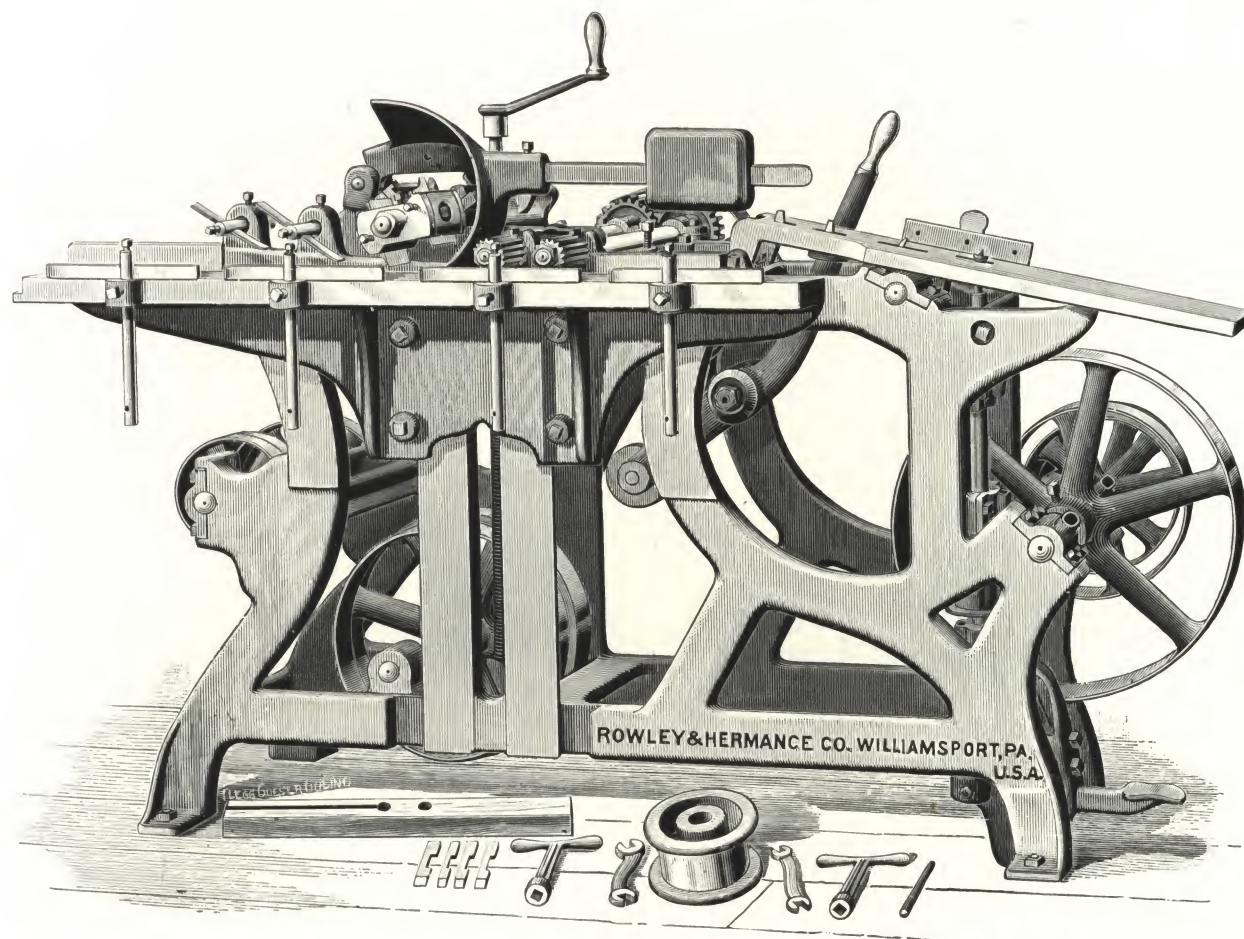
TO WORK.		Tight and Loose Pulleys.	Revs. per Minute.	Cubic Measure.	Approximate Weight.	Average H. P. Required.	Code Word.
Fig. 136	—No. 2, with Top Head, Boring and Double Grooving Attachment	10 x 4½	900	72	1,250	1 to 2	Groan.
Fig. 136 A	—No. 2, with Top and Rear Bottom Heads, Boring and Double Grooving Attachment	10 x 4½	900	.....	1,350	1 to 2	Grocery.
Fig. 136 B	—No. 2, with Top and Rear Bottom and Outside Heads, Boring and Double Grooving Attachment	10 x 4½	900	.....	1,500	1 to 3	Gronder.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 137.

ROWLEY & HERMANCO CO.'S No. 1 Sash Sticking Machine.

With Plowing and Boring Attachment.



WE here introduce the first and only machine that will plow and bore sash stiles at the same time that they are being run through the sticker.

The operator places the stile on the grooving table and pushes it forward against the first stop, then by movement of the foot treadle the bit bores the stile at any angle, so the knot in the cord will draw toward the bottom of the hole when the weight is attached, and by disengaging the foot the bit drops down out of the way and the stile is pushed forward to the second stop, completing the groove, as is shown on the sample of work at base of machine. The stile is then placed under the feed rolls and run through the machine. The plowing and boring is quickly done, and a boy can operate it, having ample time to plow and bore a short stile while another is being fed through machine. Thus the plowing and boring of sash stiles does not cost one cent to the manufacturer who uses this machine. The machine can be used as sash, door or blind sticker, as the attachment is not in the way. The bed drops 16 inches.

The Arbors are of steel and run in our patent three-part "common sense" journal box.

We furnish with each machine one cap head on arbor, one set of sash cutters for same, one bit $\frac{7}{8}$ inch diameter, one plain grooving head, one set plain grooving cutters and necessary wrenches.

Paine Lumber Co., Oshkosh, Wis., use three of these machines.

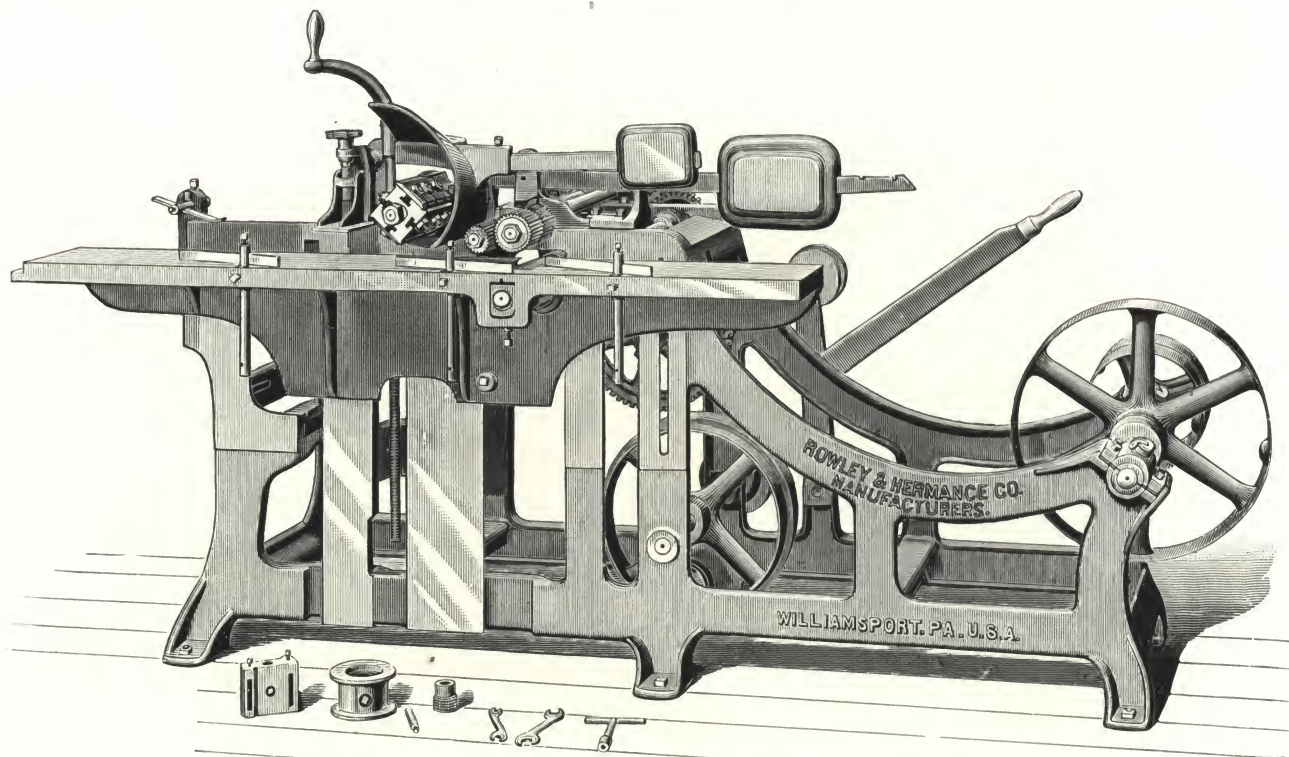
TO WORK	T. and L. Pulleys.	Revs. per Minute.	Cubic Measurement.	Approximate Weight.	Average H. P. Required.	Code Word.
Fig. 137 —No. 1, with Top Head and Plowing and Boring Attachment	10 x 4½	900	72	1,050	1 to 2	Groom.
Fig. 137 A—No. 1, with Top and Rear Bottom Heads and Plowing and Boring Attachment	10 x 4½	900	.....	.....	1 to 2	Grope.
Fig. 137 B—No. 1, with Top and Rear Bottom and Outside Heads and Plowing and Boring Attachment	10 x 4½	900	.....	.....	1 to 3	Grotto.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 138.

ROWLEY & HERMANCO CO.'S Six-Inch One-Sided Moulder.

Without Outside Bearing.



ABOVE machine embodies all the improvements of our Six-Inch Four-Sided Moulder, except that it has no outside bearing. It is used principally for sticking door stiles, door rails, sash, blinds, and any work requiring to be dressed on one side.

We call especial attention to this machine, as being the strongest feeding door sticker in the market. The under roll is so geared that it feeds equally strong when the table is lowered to 14 inches as when working thin stuff. It has two upper geared feed rolls, one weighted and the other held firmly by springs, making in all three geared feed rolls.

A Strong Feed is an essential point in a moulding or sticking machine, and for this reason we claim that this machine is the best 6-inch sticker in the market.

The Frame is heavy and strong, being cast in one solid piece. **The Table** is raised and lowered by crank on top of machine. **The Arbors** are of steel, running in long self-oiling boxes.

The Heads are also of steel. **The Top Head** is slotted four sides. **The Extra Head** that is furnished with this machine is a loose cap head. **The Table** is of unusual length, designed especially for long stuff, with the rear end rabbeted so an extension bed of wood can be attached to carry work any distance required; and is gibbed to the frame, the gibs extending the whole depth of the table, and by tightening one screw, is held rigidly at any desired height.

The Hood is adjustable to and from the cutters, to allow long knives to be used on head, and being weighted, acts as a combined pressure bar and chip-breaker. It can be thrown entirely out of the way to give the operator free access to the cutter head.

It has four rates of feed. There is a binder for feed roll instead of a clutch, giving operator control over his work.

We furnish with each one-sided machine one four-slotted head, with steel bolts, and two plain cutters, one loose cap head and set of O. G. door cutters for same, one extra spur feed roll, and four wrenches.

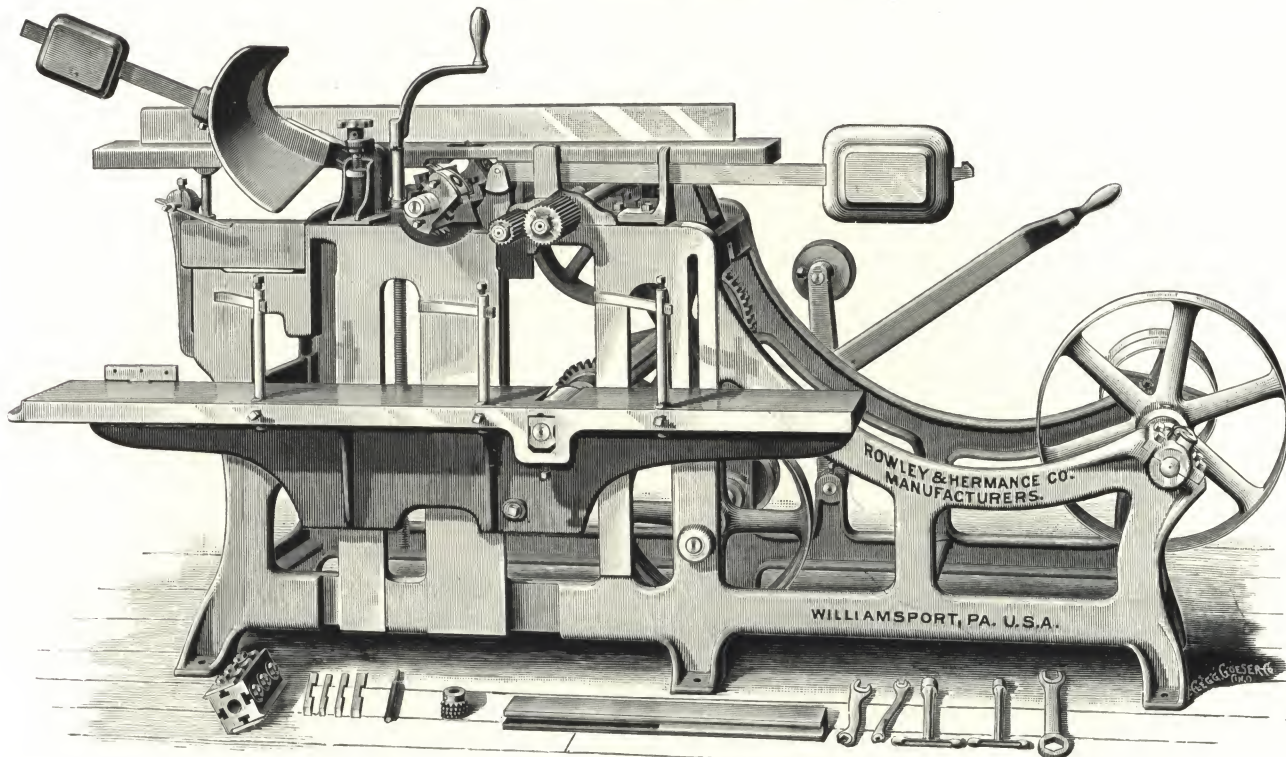
TO WORK	Tight and Loose Pulleys.	Revs. per Minute.	Cubic Measure.	Approximate Weight.	Average H. P. required.	Code Word.
Fig. 138—One Side	10 x 4½	900	110	1,225	1 to 3	Ground.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 139.

ROWLEY & HERMAN CO.'S Six-Inch One-Sided Moulder.

With Grooving Attachment.



THIS machine is used principally for sticking door stiles, door rails, blinds, and any work that is to be dressed on one side.

It also has an attachment for grooving door stiles, which consists of a table placed over the top arbor, on which there is an adjustable guide, and a head on the arbor projecting through the table. This table is adjustable vertically by means of a screw, for regulating the depth of groove.

The object of this attachment is to allow for the use of a thin door panel with grooves in the stiles narrower than the mortise. The stile is first run through the machine, and while the next stile is passing through, the same operator grooves out between the mortise of the middle rail and from the mortise to the end of the stile for the top and bottom rails.

It is the strongest feeding door sticker on the market, having three geared rolls, feeding equally strong on thin or thick stuff.

The Frame is heavy and strong being cast in one solid piece.

The Table raises and lowers by a crank on top of the machine.

The Table is unusually long, designed especially for long stuff, with the rear end rabbeted so an extension bed of wood can be attached to the end of the table to carry work any distance required.

The Table is gibbed to the frame, the gibs extending the whole depth of table, and by tightening one screw, is held rigidly at any desired height.

The Hood is adjustable to and from the cutters, to allow long knives to be used on the head, and being weighted, acts as a combined pressure bar and chip-breaker. It can be thrown entirely out of the way to give the operator free access to the cutter-head.

It has four rates of feed, and is provided with a binder for feed roll instead of a clutch, giving the operator control over his work.

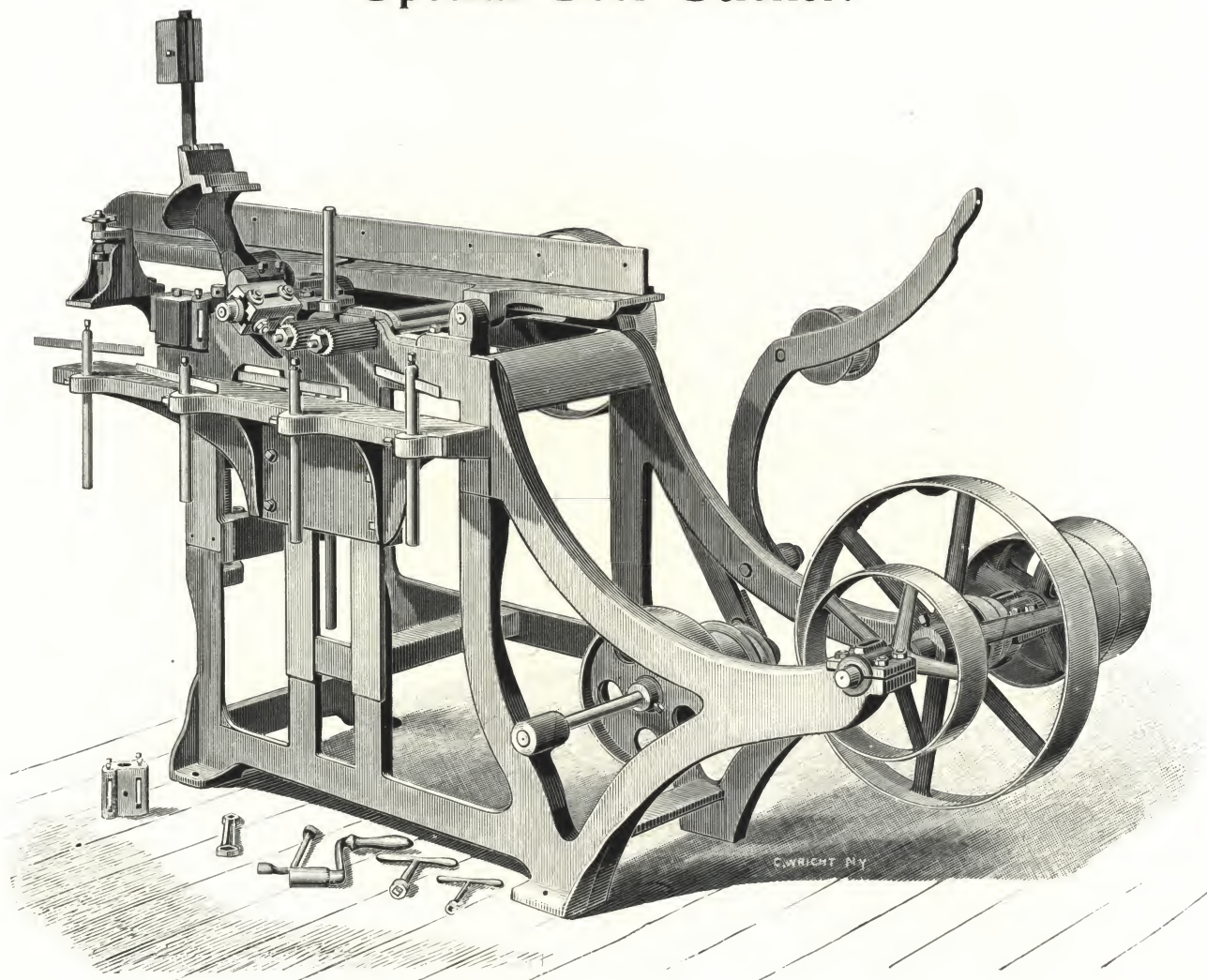
Each machine is furnished with one four-slotted steel head with steel bolts, nuts and washers, and two plain straight knives, one loose cap head with one set of O. G. door cutters, one grooving head with two straight cutters, one extra spur feed roll and five wrenches.

TO WORK.	T. and L. Pulleys.	Revs. per Minute.	Cubic Measure.	Approximate Weight.	Average H. P. required.	Code Word.
Fig. 139—One Side, with Grooving Attachment..	10 x 4½	900	110	1,250	1 to 3	Grouse.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 140.

LEVI HOUSTON CO.'S Special Door Sticker.



THE cut represents our Four-Inch Two-Sided Door Sticker, with extra long table. It has a very powerful feed, and is especially adapted to running door stiles. It also has an **adjustable top table** with an adjustable guide on it, and a head on the main or top shaft projecting through it, which is used particularly for relishing door stiles. This is usually done on a separate machine built for this purpose. Thus this combined machine **proves the saving of one machine in a door factory.**

This top table may be raised or lowered to relish shallow or deep by means of an adjusting screw.

The feed rolls, arbors and heads are all made of steel, and each machine is furnished with one extra cap head. Side spindle runs on **patent self-oiling step.**

There is a connection from the feed counter-shaft to the stud of the feed pulley, which acts as an outside bearing for the stud and shaft.

The economy in labor-saving in the combination of this machine recommends it especially to careful buyers.

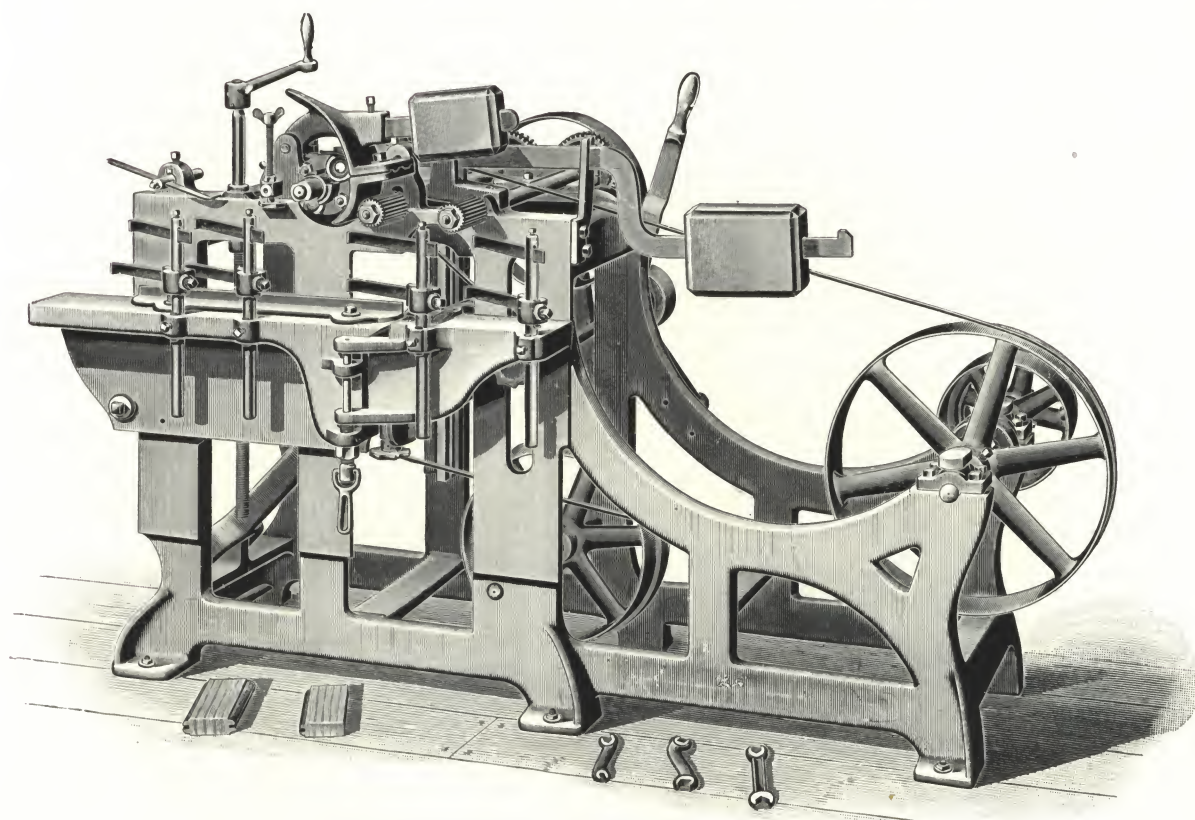
	T. and L. Pulleys.	Revs. per Minute.	Weight	Code Word.
Fig. 140—Special Door Sticker.....	10 x 4	900	800	Growler.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 141.

LEVI HOUSTON CO.'S

New Door Sticking Machine.



DOOR manufacturers will find it to their interest to read carefully the description and examine the cut of this improved machine.

It is fitted with Shimer's latest improved O. G. door heads, and has a double set of springs for holding up wide door rails. The feed rolls are weighted instead of being held down by springs, and the feed is stopped and started by use of a tightener.

The Under Head is Placed in Front of the Top Head and the bottom edge being finished first, the plow or groove runs on the long guide shown back of the under head. This gives a true and straight surface for the top head to cut against.

The under head stock is adjustable up or down, and is locked to the rear side of the machine. By opening the swing in front of the under head the **knives can be easily sharpened**, or heads quickly changed for various kinds of work.

The top and bottom heads are driven by one long, open belt, and the improved adjustable tightener keeps the tension of the belt always uniform, whether table is up for narrow work or down to 14 inches. This feature will be appreciated by all practical operators. No manufacturer of doors can afford to stick the rails and stiles in the old way and compete in prices with parties using this new machine.

Belts Required: One belt 13 feet 7 inches by 3 inches wide ; one belt 6 feet 6 inches by 2 inches wide ; one belt 8 feet 2½ inches by 2 inches wide. Floor space, 72 inches by 32 inches.

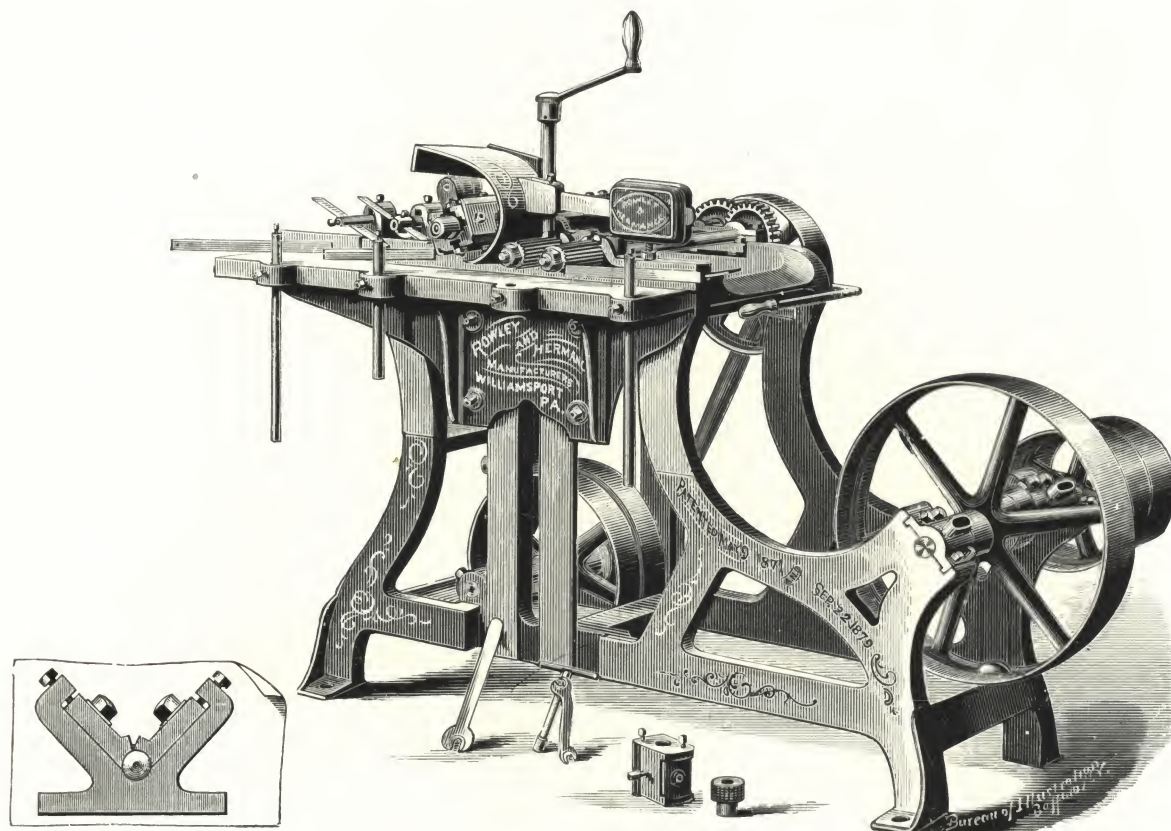
	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 141—New Door Sticker.....	10 x 4	900	1,500	Grubber.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 142.

ROWLEY & HERMAN CO.'S

Four-Inch One-Sided Moulder.



THE above cut represents our Four-Inch One-Sided Moulder for sticking sash, doors, blinds, etc. It is a strong, durable machine.

The Frame is cast in one piece. **The Bed** is raised and lowered by a single screw, and can be run down 17 inches below the top cutter head.

The Arbors are of steel, running in our patent three-part **Common Sense Journal Box** (see cut), which takes up side and top motion or wear, thereby allowing this machine to do smoother work than any other machine made.

The Head on arbor is steel—four slotted. We also furnish one extra loose cap head with each machine. The head-stock has a lateral movement, with a hand wheel, by which it can be adjusted accurately for sticking sash, grooving doors, etc.

It has two steel feed rolls of large diameter, strongly geared, making a powerful feed.

There are two changes of feed, for light and heavy work.

We furnish with each machine one set of straight cutters for the head on arbor, one set sash cutters for the loose cap head, one spur feed roll and three wrenches.

We also build this machine with **two, three or four sides**, as desired.

Each machine is tested before leaving our works and is warranted to give satisfaction.

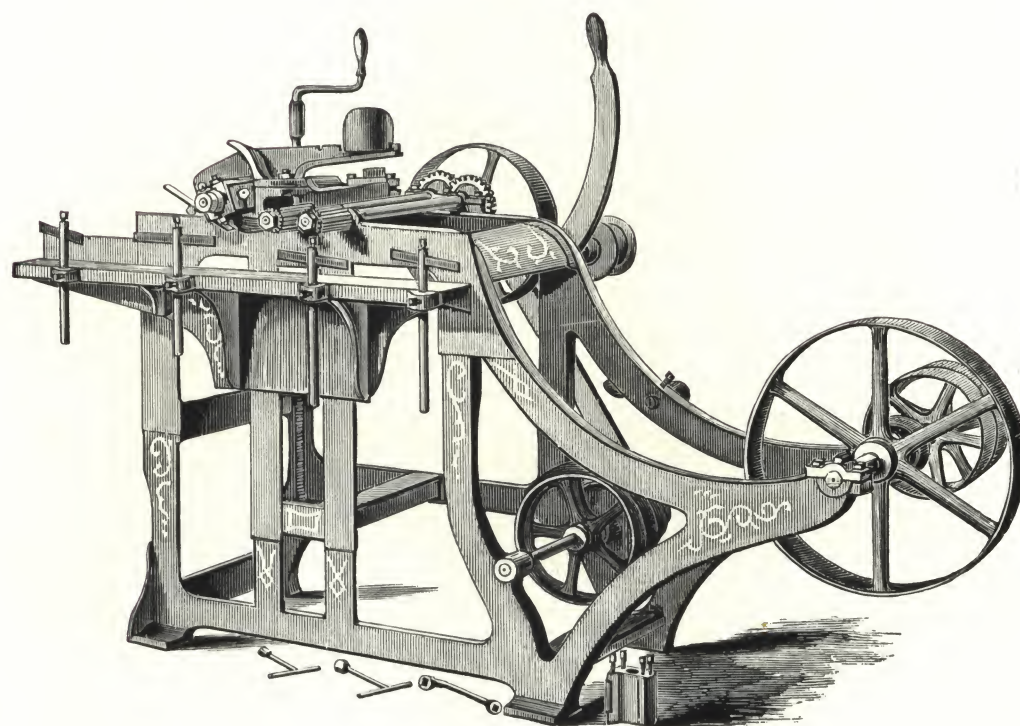
TO WORK	Tight and Loose Pulleys.	Revs. per Minute.	Cubic Measurement.	Approximate Weight.	Average H. P. Required.	Code Word.
Fig. 142—One Side.....	10 x 4½	900	65	1,000	1 to 2	Grudge.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 143.

LEVI HOUSTON CO.'S

One-Sided Door Sticker.



THE above cut represents our Four-Inch One-Sided Door Sticker. It has a long table for running Door Stiles, and has a very strong feed.

The Feed Rolls, Arbors and Heads are made of steel.

There is a connection from the feed counter-shaft to the stud of the feed pulley, which acts as an outside bearing for the stud and shaft.

Each machine is furnished with one extra cap head.

The arbor should run about 7,000 turns per minute.

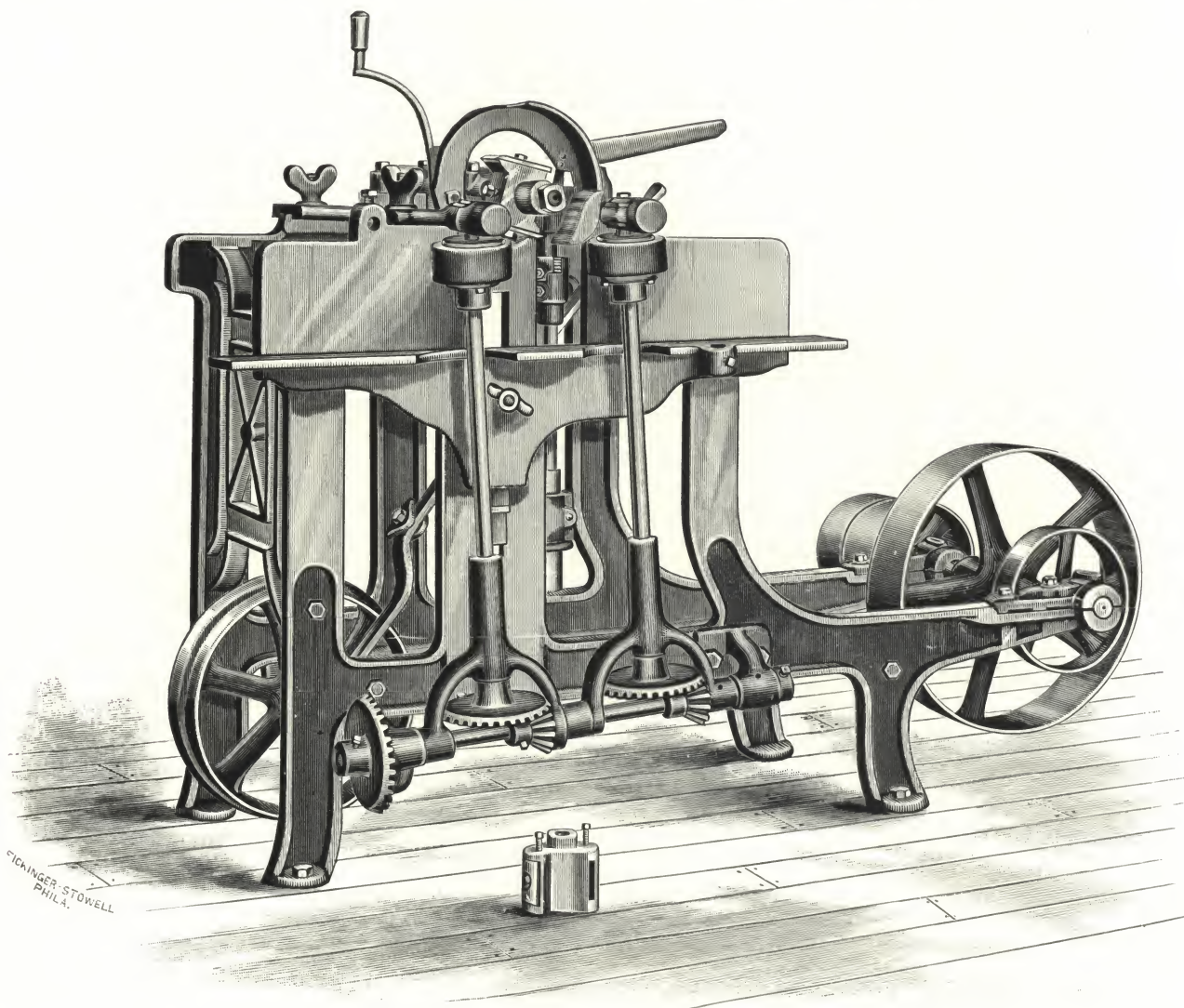
	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 143—One-Sided Door Sticker.....	10 x 4	900	750	Grumble.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 144.

GOODELL & WATERS'

Gleen Patent Elastic Feed Moulder.



THIS is a very economical machine for working centre reeds and mouldings on panels, rails and stiles, and we specially recommend it to sash and door makers, car builders, furniture factories and establishments where the finer grades of such work is required.

The **Feed Rolls** are made of hard rubber so that the stock may be worked after it has been brought to the desired thickness, **without injuring the surface** and leaving no feed prints, and it discharges its own stock without putting in an extra piece in order to push the last piece out.

A **Sash Head**, or a regular slotted moulder head, four inches wide, may be used on the top spindle.

The **Side Head** carries knives $2\frac{5}{8}$ inches wide.

The **Table** drops eighteen inches, and the feed rolls may be extended from the fence four inches.

	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 144—Gleen Patent Elastic Feed Moulder.....	10 x 6	850	1,050	Grunt.

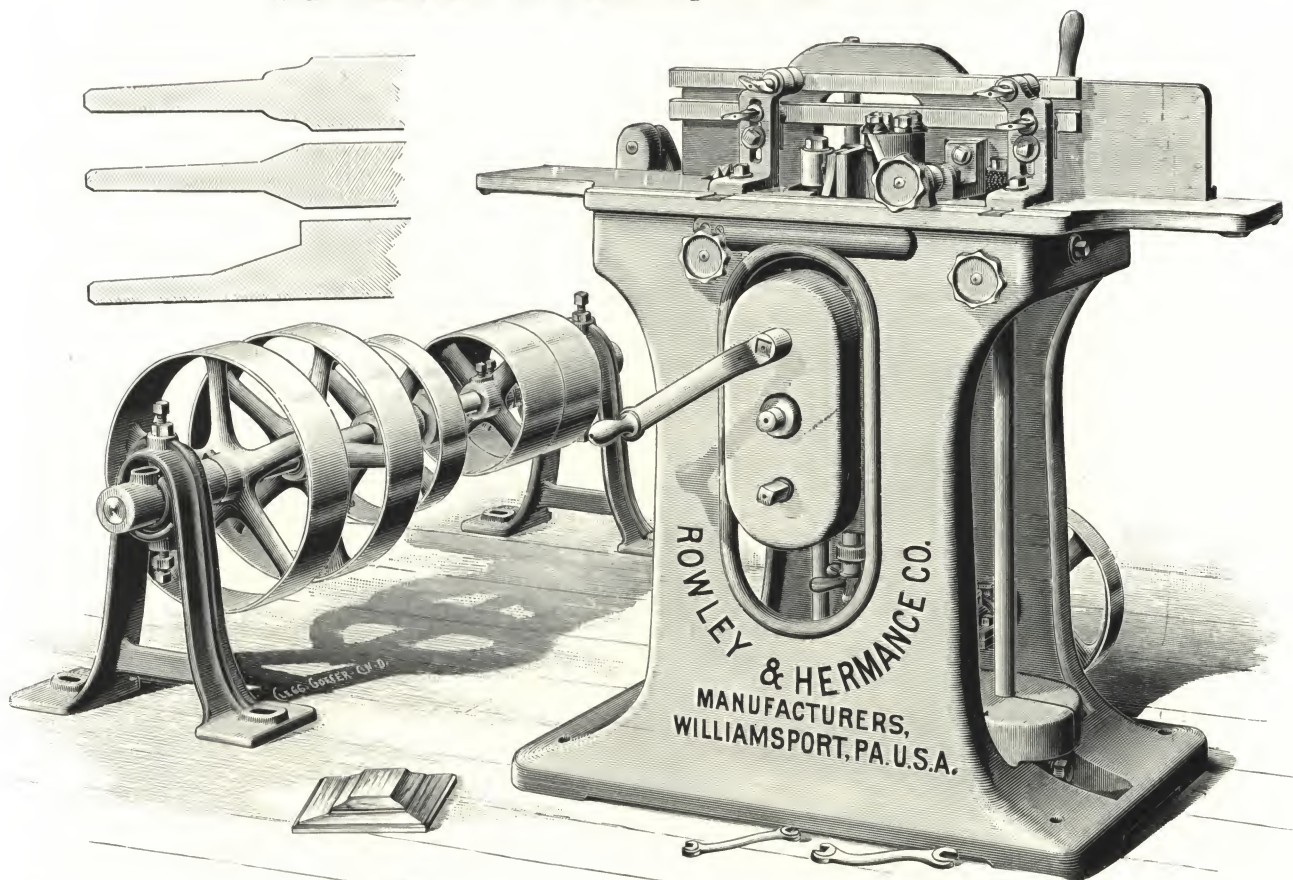
AMERICAN WOOD-WORKING MACHINE CO.

Fig. 145.

ROWLEY & HERMANCO CO.'S

No. 2 New Power Feed Panel Raiser.

With Attachment for Chamfering the Edges of the Panels.



WE ask your careful consideration of the accompanying illustration and following description of our New Power Feed Panel Raiser. The frame is cast in one piece with a large base. The cross-head carrying the two headstocks is gibbed to the inside of the frame and has a vertical adjustment. Each headstock has also an independent vertical adjustment, by which a panel can be raised wide on one side and narrow on the other. The headstocks are adjusted horizontally by our **Patent Side Setting Device**, whereby either of the spindles can be adjusted independently to any angle; these adjustments are made from the side of the machine where the operator can see his work while making the adjustment and without stopping the machine. This will be found the most convenient adjustment ever applied to a panel raiser, and will be appreciated by all operators, as it is an improvement over the old way of setting and fastening the headstocks with bolts.

The Feed works are of the latest design. The two feed shafts are connected with gears, and are adjustable to suit the various thicknesses of panels being raised. There are two rates of feed, viz: 28 and 38 lineal feet per minute. The feed is stopped and started by our improved clutch and lever, which is placed convenient to the operator.

The Table, to which is fitted the front and back guides, is so arranged that it can be raised clear of the heads if desired; both the front and back guides are adjustable.

The Cutter Heads are provided with adjustable chip-breakers and pressure-shoes, which are new features on Panel Raisers. The chip-breakers can be adjusted close to the knives, and the pressure-shoes can be adjusted to the cut to hold the panel steady. This insures perfectly smooth work on either cross-grained, knurly, or brash lumber, and across the ends of panels. If these attachments are properly adjusted it will be impossible to raise a wavy panel.

Our New Cutter Head we claim to be the most scientific head ever invented for the purpose of raising panels. The knives that raise the tenon have a shear or draw cut, that is the knives do not come in contact with the grain of the wood all at one time; this is the only cut that can be made to produce perfectly smooth work on all kinds of wood. On the top of this head is placed the Shimer Circular Cutters, for making any style of moulding—ogee, bevel or square raise. These cutters also have a draw cut and plenty of clearance, and the work produced by these cutters is so smooth that it requires no further preparation for oiling.

There is another feature we wish to call your attention to on this machine. We have placed in the table, rear of the cutter heads, an attachment for **chamfering the edges of the panels** so they will fit into the groove of the door rail and stile without subsequent hand-fitting; this attachment leaves no sharp edges to be hand planed, and prevents splitting of rails and stiles.

This machine will raise any style of moulding, ogee, bevel or square, on one or both sides of the panel, and chamfer the edges of the panel at one operation, from $\frac{1}{2}$ inch up to 4 inches, without change of heads or cutters. If desired, can raise an ogee on one side and bevel on the other and chamfer the edges at one operation.

Each machine is furnished with one set (4) Raising Cutters, one set (4) Shimer Circular Ogee Cutters, one set (4) Shimer Circular Bevel Cutters, one Chamfering Head with cutters and the necessary wrenches.

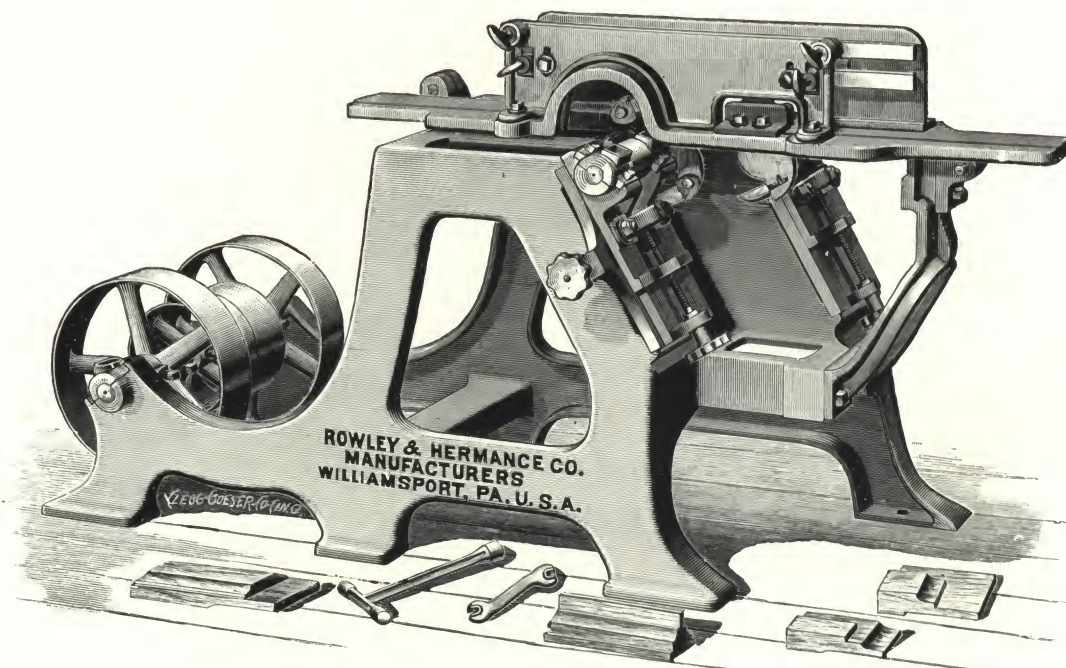
STYLE.	T. and L. Pulleys.	Revs. per Minute.	Cubic Measurement.	Weight.	H. P. Required.	Code Word.
Fig. 145—No. 2 Power Feed Panel Raiser.....	10 x 5	800	40	1,200	1 to 2	Guild.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 146.

ROWLEY & HERMANCE CO.'S

No. 1 Improved Adjustable Hand Feed Panel Raiser.



WE invite the attention of Door Manufacturers to the above cut, representing our new improved Adjustable Panel Raiser, for raising any style of moulding, O. G., square or bevel. It will raise a panel on one or both sides, at one operation, from $\frac{1}{2}$ inch up to $4\frac{1}{2}$ inches, without change of head or cutters. Can raise a bevel on one side and O. G. on the other, if desired, at one operation.

The Frame is cast in one piece, making it very rigid.

We claim for it the following advantages over any similar machine:

First.—The right-hand head setting in front of the left-hand head admits of easier and quicker adjustment, and the guide being on the right of the operator makes it easier to operate.

Second.—It will raise a panel on one or both sides at the same time, and make any desired variation on either side up to $4\frac{1}{2}$ inches, without change of heads or cutters.

Third.—The heads have a lateral adjustment, and as they raise and lower on an incline the tension of the belts remains the same.

Fourth.—The cutters are set in a position to give a shear cut, thus making the panel perfectly smooth in brash or cross grain stuff.

Fifth.—It will cut smoother across the ends of panels than any other panel raiser made.

Sixth.—Each head is provided with an independent adjustable pressure shoe, which holds the work perfectly rigid.

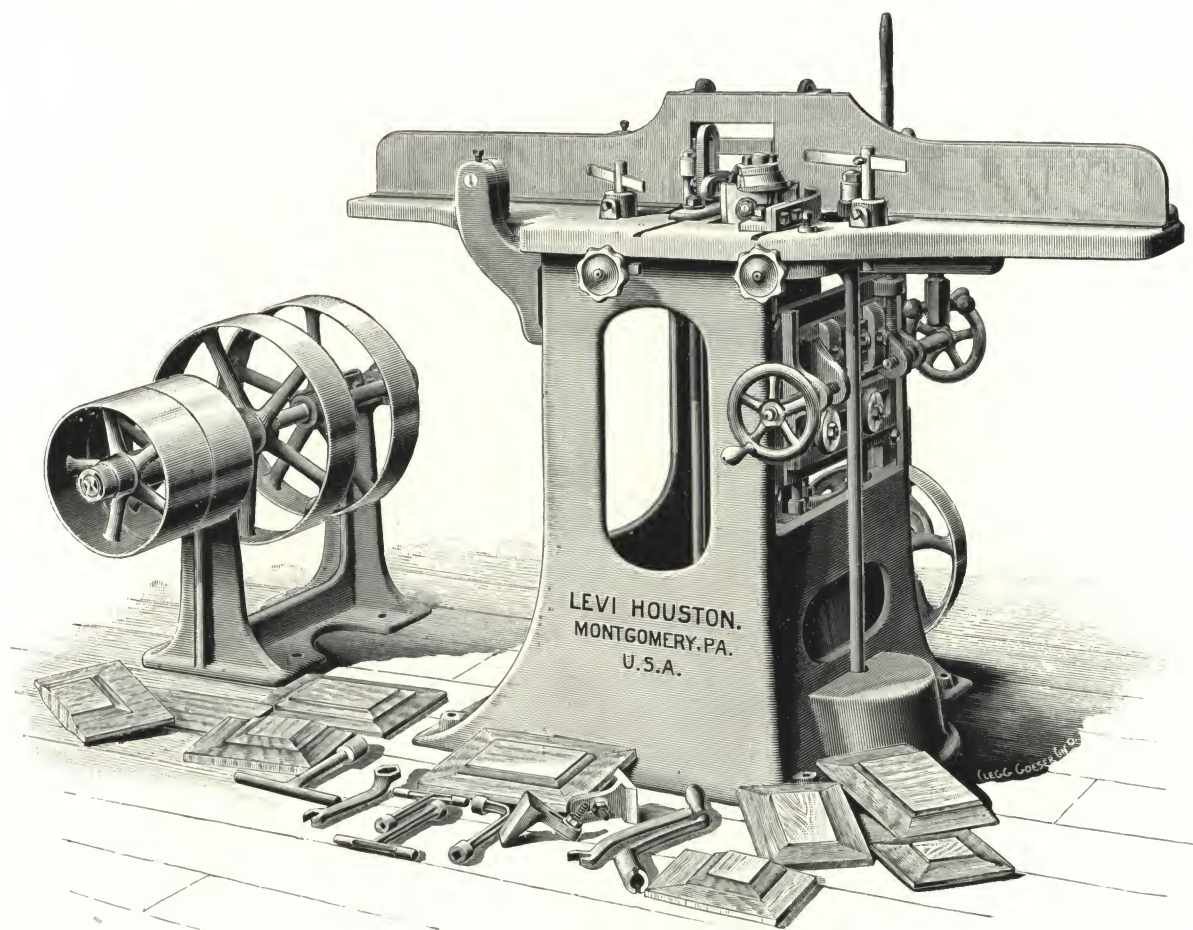
STYLE.	Tight and Loose Pulleys.	Revs. per Minute.	Cubic Measurement.	Approximate Weight.	Average H. P. Required.	Code Word.
Fig. 146—No. 1, Improved Adjustable Hand Feed Panel Raiser,	9 x 4	800	45	800	1 to 2	Guitar.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 147.

LEVI HOUSTON CO.'S

Patent Improved Panel Raising Machine.



THIS machine is of the most modern design and substantial construction, and will work panels on one or both sides at one operation. The peculiar form of cutters gives them a drawing cut, working readily on either hard or soft woods smoothly. The machine is provided with new combination heads, which admit of changing the moulding cutters so as to produce a shoulder, bevel, ogee or any other style of moulding desired on the panel, without disturbing the other cutters. Some of the various styles of work this machine is capable of doing are shown in the above cut.

The **Brass Cheeks** and chip-breakers are adjustable, as is also the large guide or fence on the table. The table is hinged at one end and can be swung up to give free access to the cutter-heads and interior parts.

The **Head Stocks** are adjustable vertically both together and independent of each other. They may be set on any angle required, and are both provided with independent horizontal adjustment. The machine is provided with adjustable feeding-in and feeding-out rolls. The head stocks are heavy and provided with substantial clamping devices. Nothing has been spared to make this machine all that could be desired.

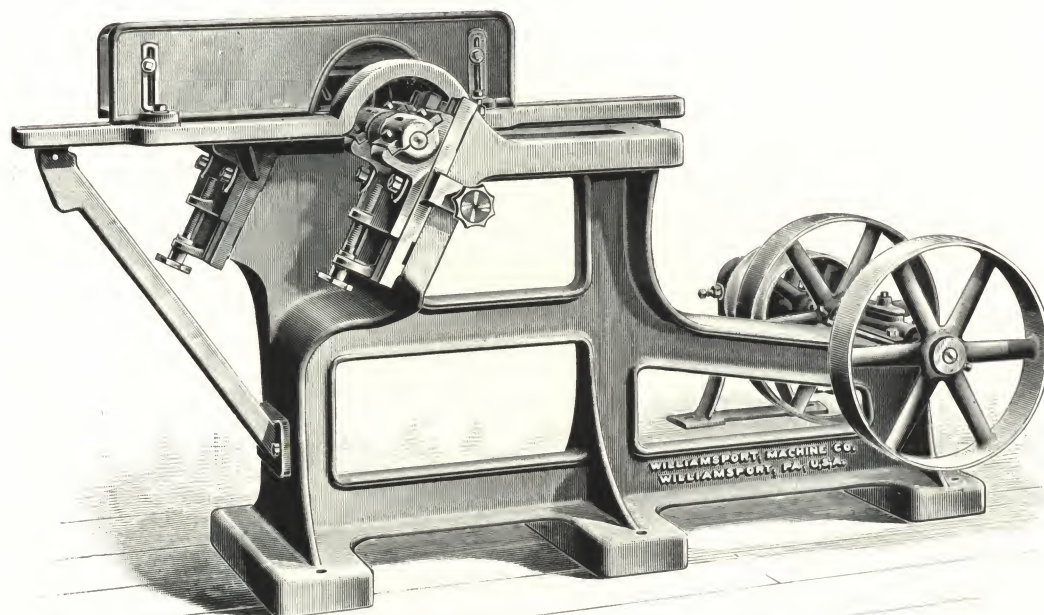
STYLE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 147—Patent Improved Panel Raising Machine.....	10 x 4	900	1,000	Gullet.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 148.

WILLIAMSPORT MACHINE CO.'S

New Style Panel Raiser.



THIS Panel Raiser is unusually heavy, weighing 1,200 pounds, and the frame is one solid casting, making it very firm and rigid.

An important improvement on this machine is in the kind of cutters used and their arrangement. On all of the old style machines four knives are used, being bolted on the heads, but on this Panel Raiser we make use of two patented cutters, which are perfectly solid and screw on the arbors, permitting of much quicker adjustment, and can be run at much higher speed. These make a shear cut, and we guarantee that a better grade of work can be done on cross-grained stock and across the grain of lumber than on any other Panel Raiser.

With the use of these heads small knives can be attached for cutting ogee and bevel panels without disturbing the main knives. Unless ordered otherwise we will furnish the machine with our special "S" shaped patented cutters.

The Heads are arranged one in front of the other, and can be quickly adjusted in either direction for different work. Each head has an independent pressure-shoe, which holds the work perfectly rigid. Cutters can be supplied at the same price as a set of knives for our old style machine, which always gave such universal satisfaction.

This Machine will raise a panel from $\frac{1}{4}$ to $4\frac{1}{2}$ inches, on one or both sides, at one operation, without change of cutters, and will also raise a panel for $\frac{1}{8}$ -plow as successfully as for a $\frac{1}{2}$ -inch, which cannot be done on any other machine.

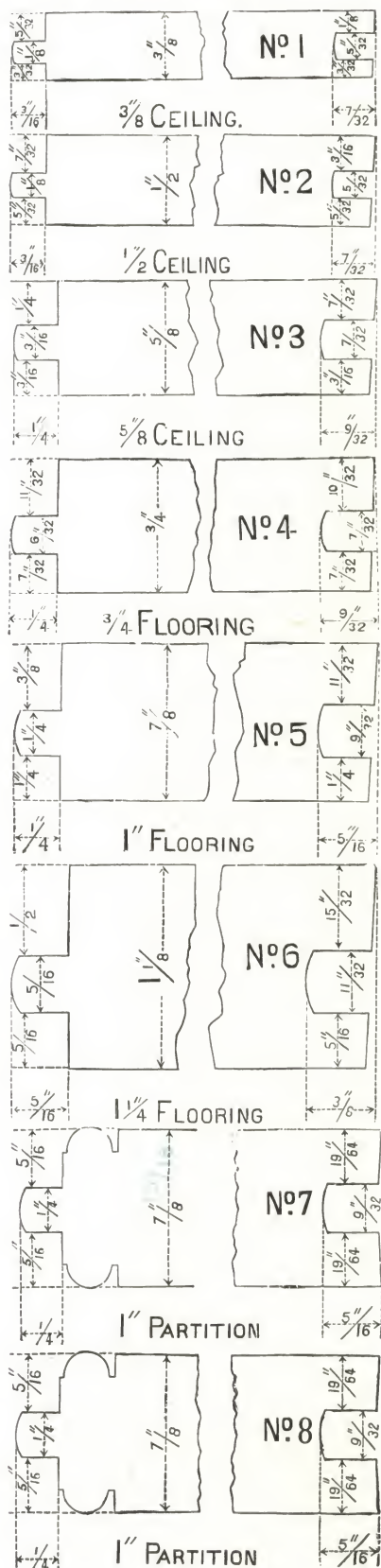
The Counter-Shaft is strengthened by an outside bearing, and in every particular the machine is one that surpasses any of the kind on the market.

Belts Required: One 10 feet 8 inches long, one 11 feet 11 inches long, both 3 inches wide.

STYLE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 148—New Style Panel Raiser.....	10 x 4	850	1,200	Habit.

AMERICAN WOOD-WORKING MACHINE CO.

New York and Norfolk Standard.



GLEN COVE MACHINE CO.'S

Official Gauges.



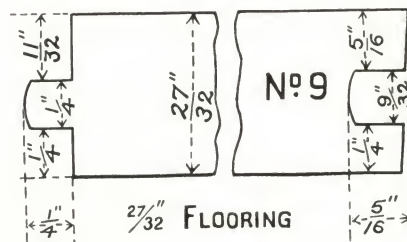
OFFICIAL GAUGES.

Price at Factory, \$1.00 Each. By Mail, \$1.25 Each.

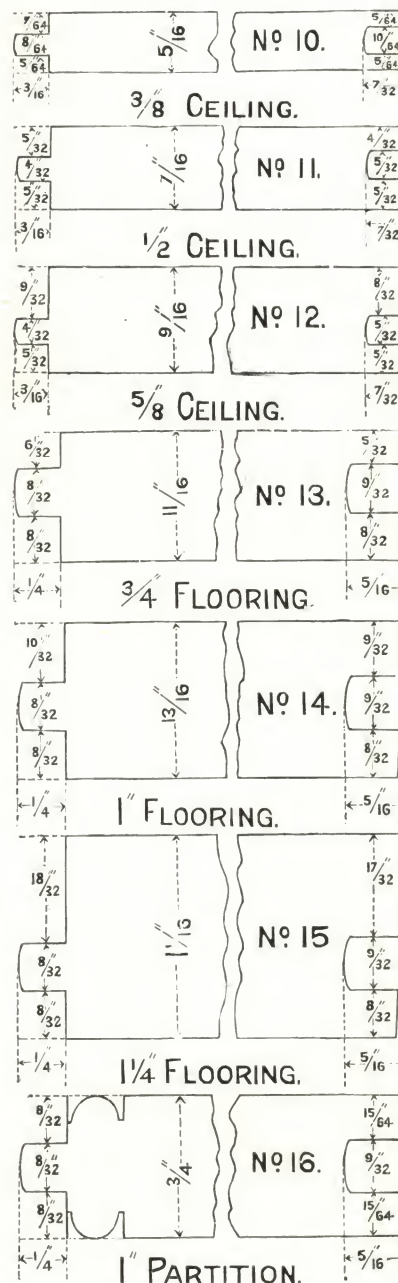
WE have prepared ourselves to manufacture these **Gauges** rapidly, accurately and cheaply, by means of special tools put in expressly for the purpose. We thus furnish a **Perfect Metal Gauge** at a very **low price**. The above cut is a good illustration of our Gauges, and is about half size. With this Gauge a machine may be set up to do **perfect matching** in much less time than it would otherwise take to set it up for imperfect matching, so that while the **quality** of the lumber is improved and its **value increased**, the cost of handling the machine is diminished. It is important that lumber sent by different mills to the same market should be **uniformly matched**.

Gauges should be ordered by their numbers, as designated in the accompanying diagrams.

New York and Norfolk Standard.



Southern Lumber Manufacturers, Association Standard.

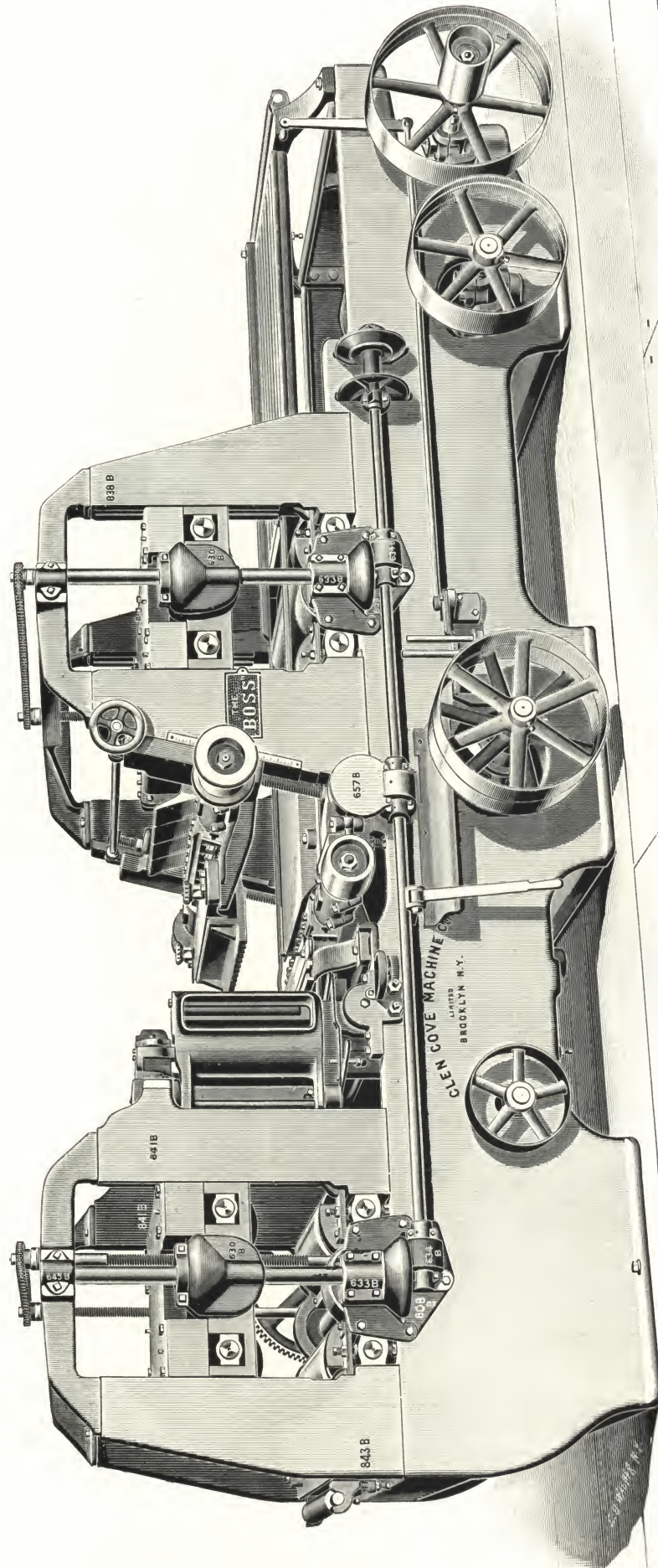


See Opposite Page for Description.

Fig. 149.

GLEN COVE MACHINE CO.'S

"Boss" Heavy Divided Roll Surfacers and Matchers.



Built in Two Sizes: 30 inches wide; 18 and 16 inches hoist; eight 10-inch feed rolls.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 149.

GLEN COVE MACHINE CO.'S

"Boss" Heavy Divided Roll Surfacers and Matchers.

THE cut on opposite page represents our eight-roll "Boss" Timber Machine, which will dress 16 or 18 inches thick, as desired, and up to 30 inches wide. It has "broken" rolls and sectional chip-breaker, and owing to the parallel hoist of each section of the broken rolls, it can be used as a surfacer on thin stuff as well as for heavy work.

The Heavy Top Cutter head boxes are yoked together with the pressure-bar and chip-breaker supports and can be firmly clamped to the cutter-head bed by means of two long wedges running the entire length of the slide, the same being tightened or loosened by the lever device operated at the work side of the machine, as shown in the cut.

The Friction Hoist shaft is made in two pieces, and can be coupled to raise all the rolls and the top cutter-head together, or can be instantly disconnected, allowing the operator to raise and lower the carrying-in rolls, independent of the top cutter-head and carrying-out rolls, making it very convenient when lumber varies very much in thickness.

The Side Cutter-Head frames are hung on two solid bars (instead of the usual single bar) which are attached to the main frame of the machine; they are adjusted to and from each other by means of side adjustment screws. After being set in place, they are clamped to the frame solidly, by moving a single lever, which is attached to said clamp and is always ready for use. This virtually connects the side spindle (both above and below the cutter-head) firmly to the main frame and makes this part of the machine positively rigid and unyielding. The side head chip-breakers are made in hood form, so that when in position, they form complete shaving hoods. By unhooking the weight chain these heads can be swung back, leaving the head easily accessible.

These side head frames have both top and side pressure shoes to hold the lumber firmly while being dressed.

The Top Bearings of the side head, spindle and the side heads are removable, and matcher heads especially made for these machines, can be quickly substituted, so that lumber can be matched any desirable thickness. Manufacturers of factory flooring, sheet piling, car decking, sills, etc., will appreciate this feature.

The Bottom Cutter-Head is so arranged, that by loosening the heavy clamp screw on each end, it may be easily drawn out at either side of the machine, for access to head and knives. The slide for this cutter-head is supported on vertical screws to increase or decrease the cut of the knives.

The Broken Roll bearings are fitted with brass bushings, instead of babbett, so that should they become worn, they could easily be replaced.

All bearings have chambered oil boxes, provided with tubes leading to convenient places for oiling.

The construction of this machine is first-class in every respect. Cut gears are used and all parts made by templets, and all parts numbered, so that duplicate parts can be ordered by number when wanted.

Floor Space is 15½ feet by 9 feet over all.

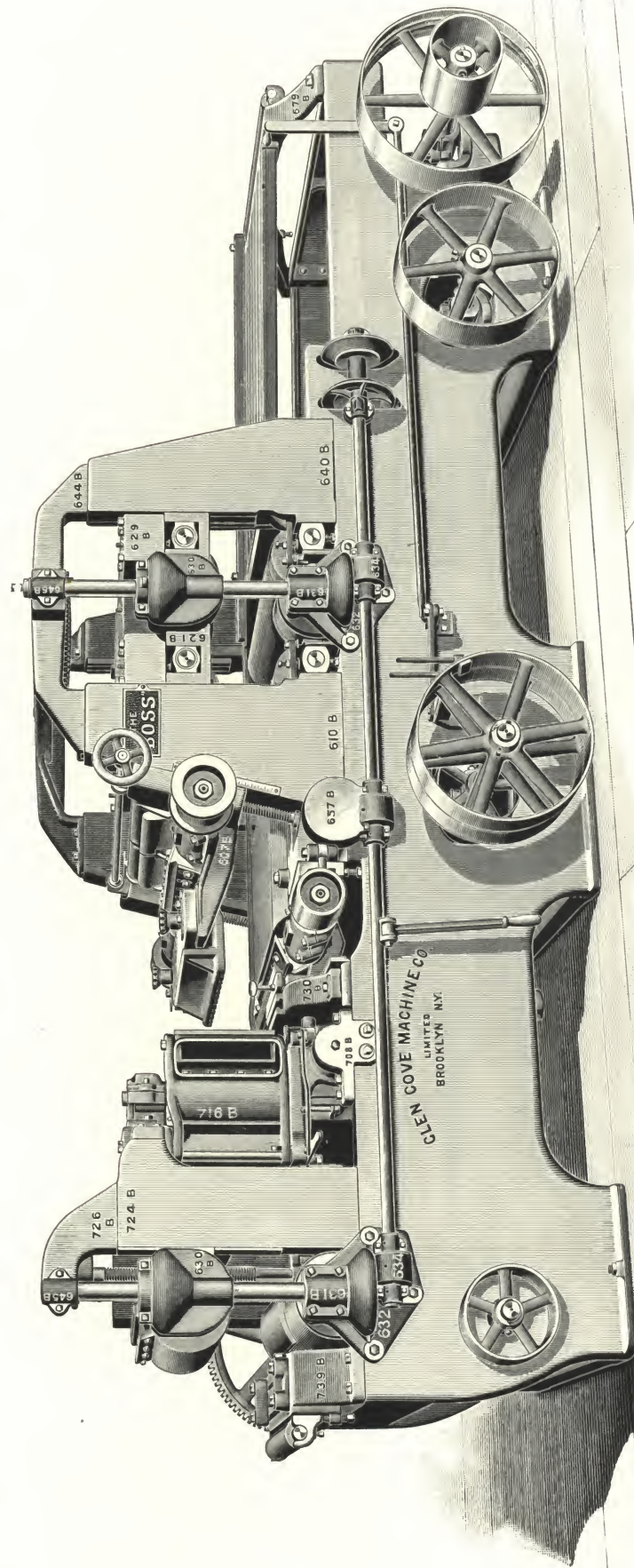
SIZE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 149 —30 x 18.....	16 x 10	1,000	20,000	Haddock.
Fig. 149 A—30 x 16.....	16 x 10	1,000	19,500	Haggler.

See Opposite Page for Description.

Fig. 150.

GLEN COVE MACHINE CO.'S

"Boss" Heavy Divided Roll Surfer and Matcher.



Built in Two Sizes: 30 inches wide; 14 and 12 inches hoist; six 10-inch feed rolls.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 150.

GLEN COVE MACHINE CO.'S

"Boss" Heavy Divided Roll Surfacers and Matchers.

IN designing The Boss Machine it has been our purpose to produce a heavy and effective machine, capable of double surfacing and matching every description of lumber, from a $\frac{3}{8}$ -inch board to a 12-inch or 14-inch timber, in the best manner, and in the shortest possible time.

To this end we have entirely discarded the old and defective method of placing the feed roll and cutter heads in one adjustable frame, but have founded them upon a solid bed, and while the head and rolls are each independent of the other in their adjustment for "lining up," they are still connected to a single hoisting device, for the quick changing of the machine for different thicknesses.

The Friction Hoist Shaft is made in two pieces and can be coupled to raise all the rolls and the top cutter-head together, or can be instantly disconnected, allowing the operator to raise and lower the carrying-in rolls, independent of the top cutter-head and carrying-out rolls, making it very convenient when lumber varies very much in thickness.

Its operation is controlled by two simple levers, without any additional jam nuts, etc., which commends itself to those who may desire to change the machine a number of times in a day's run. The entire hoist from $\frac{3}{8}$ -inches to 12 inches, is accomplished in one minute.

The Upper Carrying-in Rolls are "broken" or divided into two sections, each entirely independent of the other, and both are driven by heavy spur gears, on an intermediate shaft in the frame, carrying the ways or slides for these roll boxes. This frame is so arranged by means of a patent rock-arm device, that when it is lifted by either the hoist-screws or the varying thickness of the lumber, all four corners rise with a parallel movement. For driving the intermediate shaft of this frame, and also the upper carrying-out roll, we have substituted therefor a single heavy upright shaft, driven by bevel gears, secured in three good bearings and with a key-way long enough to allow a bevel gear to slide up and down the requisite 12 inches.

A moment's inspection will show how simply and effectively we have substituted a powerful driving mechanism for the numerous expansion gears, that presented so many joints to wear and clog up, and yet occupied so much more space than the form we have adopted.

All bearings have chambered oil boxes, provided with tubes leading to convenient places for oiling.

Floor Space is 14 feet $1\frac{1}{2}$ inches by 9 feet $10\frac{1}{2}$ inches over all.

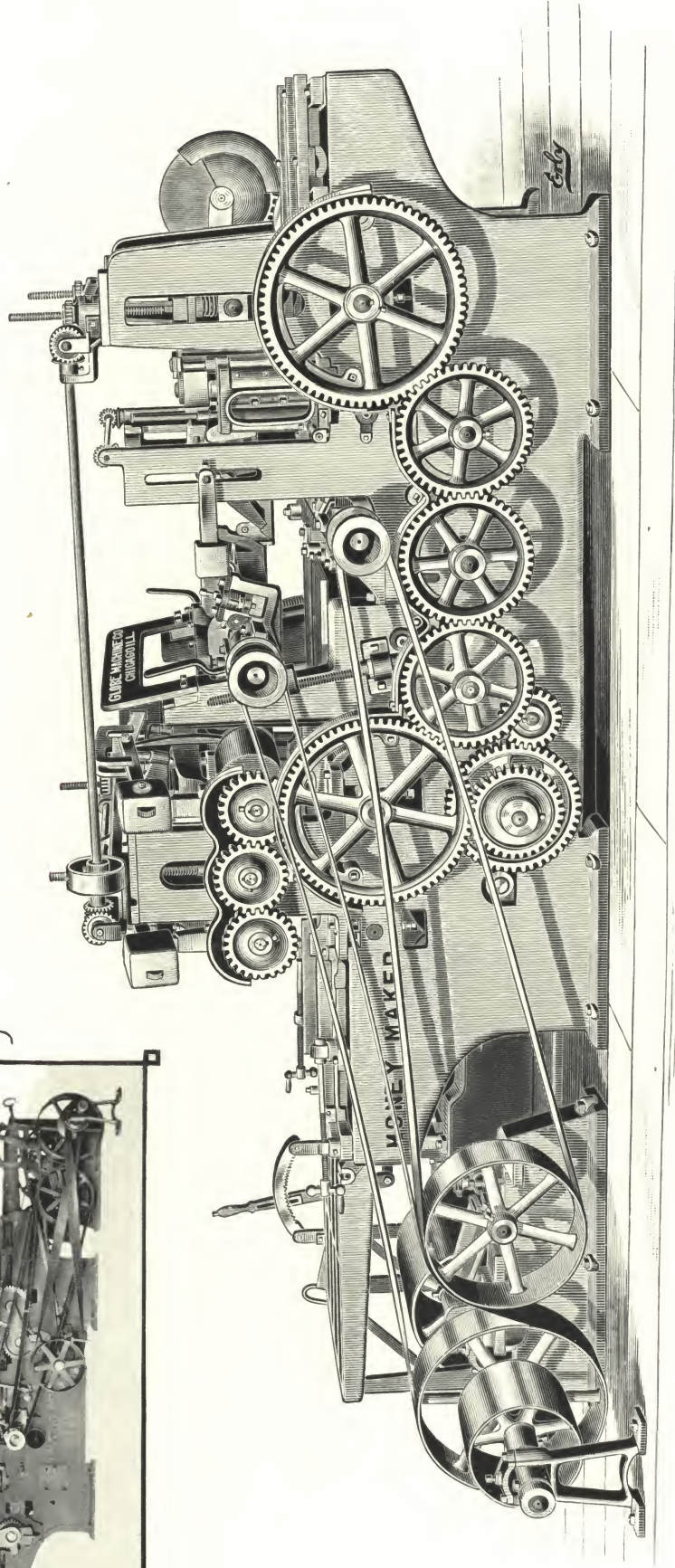
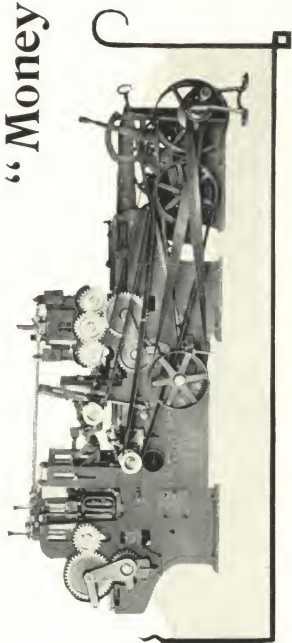
	SIZE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 150	—30 x 14.....	16 x 10	1,000	15,200	Hamlet.
Fig. 150 A	—30 x 12.....	16 x 10	1,000	15,000	Hamster.

See Opposite Page for Description.

Fig. 151.

GLOBE MACHINE CO.'S

"Money Maker" Surfacer and Sizer.



Built in Six Sizes: 26 x 8, 26 x 12, 26 x 16, 30 x 8, 30 x 12 and 30 x 16.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 151.

GLOBE MACHINE CO.'S

"Money Maker" Surfacers and Sizers.

THIS Machine is especially designed for planing all kinds of mill lumber perfectly square. It is built in six sizes to surface on all four sides: 26 x 8, 26 x 12, 26 x 16, 30 x 8, 30 x 12 and 30 x 16. It is well suited for doing a general variety of mill work, and may be used for chamfering or beading heavy girder beams. When the center guide is used two pieces may each be surfaced on three sides simultaneously.

The Feed is very powerful and under perfect control of the operator. It consists of 10-inch lower feed rolls with large bearings and 8½-inch upper rolls, these rolls are strongly geared with one expansion gearing. All feed rolls run parallel with the lumber.

The Upper Feeding-in Rolls before the top cylinder are sectional to admit two pieces of unequal thickness at the same time, and are provided with weight levers. By the use of the power hoist the machine is quickly changed while running, so that adjustments for various thicknesses can be made without stopping the machine. Four sectional pressure chip-breakers having ¾-inch independent lift are placed before the cut of the top cylinder. The top and bottom cylinders are solid steel forgings with 2½-inch journals. They are slotted or tapped on all sides, as desired, and are capable of taking a heavy cut. The side heads are square and are slotted on four sides, fitted with spring chip-breakers. All cutter-heads can be readily connected to shaving hoods or conveyors.

The Side Spindles are extra heavy, with three bearings, the top boxes being removable. Large self-oiling boxes are used throughout this machine. It is equipped with a patent feed belt tightener and automatic belt spreader. The countershaft is independent, and is provided with a new device for taking up slack in the cylinder belts.

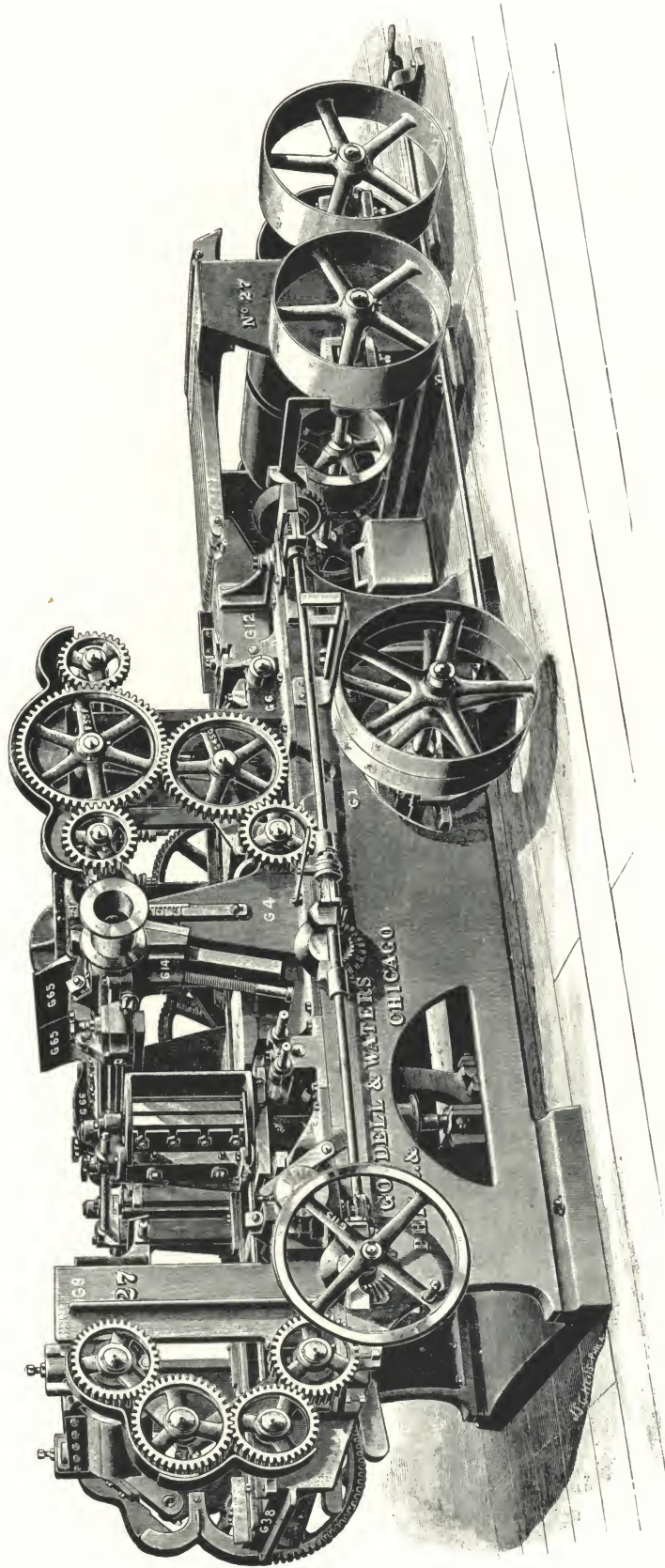
SIZE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 151 —30 x 16.....	14 x 10½	850	<div> <div>10,000</div> <div>to</div> <div>15,000</div> </div>	Hanaper.
Fig. 151 A—30 x 12.....	14 x 10½	850		Handful.
Fig. 151 B—30 x 8.....	14 x 10½	850		Handily.
Fig. 151 C—26 x 16.....	14 x 10½	850		Handsel.
Fig. 151 D—26 x 12.....	14 x 10½	850		Handy.
Fig. 151 E—26 x 8.....	14 x 10½	850		Hapless.

See Opposite Page for Description.

Fig. 152.

GOODELL & WATERS'

No. 27, Extra Heavy Double Planer and Sizer.



Patented August 26, 1884, July 9, 1895, June 16, 1896.

This machine is built to Surface on two sides, 30 x 14, and as a Sizer, 30 x 14.

Fig. 152.

GOODELL & WATERS'

No. 27, Extra Heavy Double Planer and Sizer.

CONSTRUCTION. It is constructed on the most improved principles and proportions. It is superior in every way to any of its class on the market. The main body of the machine is about 11 feet 6 inches long, and contains the principal working parts. It has our patented improved sectional rolls and pressure bars, and entry spring pressure, combined with weighted levers, which yield when admitting excessive thickness. The counter annex forms support for the entry table and hoist driving device.

Capacity. As a double surfacer this machine will plane two sides 30 inches wide by 14 inches thick, and as a sizer on all four sides of a stick up to 30 inches wide by 14 inches thick. The double surfacer and sizer is provided with center guide, and will dress top and bottom and single edge two pieces, each 13½ inches wide.

Feed Works. There are six feed rolls, powerfully geared to secure good, strong feed, and are arranged to lift parallel. The journal boxes are in halves.

Adjustments. The method of changing thickness is very quick and convenient. All the top rolls, head and pressure bars are raised and lowered in one operation by power. They may be raised by hand as well, and each respective part has also an independent adjustment. The under head is arranged with our improved swing-down entry bar, which gives easy access to the head.

Cutter Heads. All heads are four-sided, slotted on four sides. The side heads are solid forgings (unless otherwise ordered). The top and under heads are provided with our patent adjustment to prevent end play. The side heads are also provided with adjustment for the same purpose.

Every Part or Piece of the machine has a number cast or stamped upon it, so that by simply giving the number of the machine and the number on the part wanted, duplicates may be readily ordered by wire or by mail.

BELTING REQUIRED.

Two Top Head Belts, each 23 feet 10 inches long, 6 inches wide.
One Under Head Belt, 23 feet 3 inches long, 6 inches wide.
Two Side Head Belts, each 25 feet 5 inches long, 5 inches wide.
One Feed Belt, 18 feet 6 inches long, 3 inches wide.

For Raising and Lowering Device:

One Cross Raising Belt, 11 feet 5 inches long, 3 inches wide.
One Straight Lowering Belt, 11 feet 3 inches long, 3 inches wide.

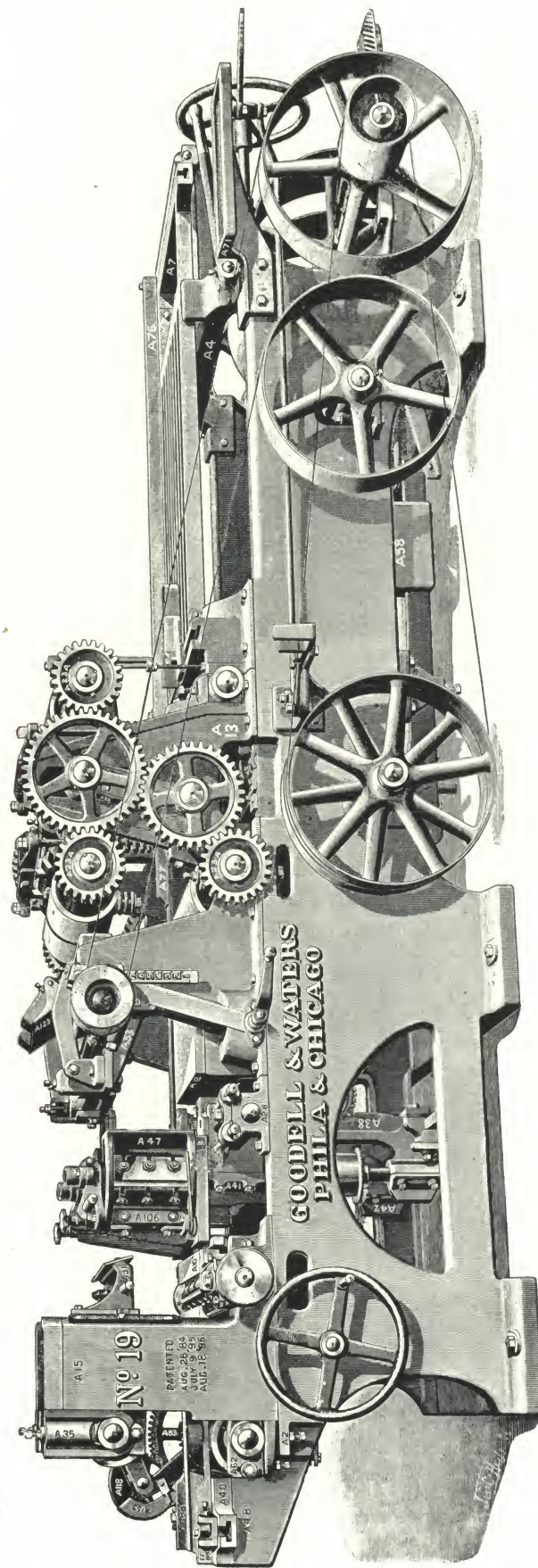
SIZE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 152 —As a Sizer, Four Sides, 30 x 14.....	16 x 10	925	16,000	Harass.
Fig. 152 A—As a Double Surfacers, 30 x 14.....	16 x 10	925	15,000	Hardily.

See Opposite Page for Description.

Fig. 153.

GOODELL & WATERS'

No. 19, Heavy Planer and Jointer.



Patented August 26, 1884, July 9, 1895, August 18, 1896.

This machine is built to Surface on Two Sides, 28 x 12, and on Four Sides, 27 x 12.

Fig. 153.

GOODELL & WATERS'

No. 19, Heavy Planer and Jointer.

CONSTRUCTION. This machine is of entirely new design. It has our patented improved sectional rolls and pressure bars, and entry spring pressure, combined with weighted levers, which yield when admitting excessive thickness. It is built as shown by the engraving, or with the under head at the out-feeding end of the machine.

Capacity. Will double surface 28 inches wide, up to 12 inches thick ; will plane all four sides, 27 inches wide, up to 12 inches thick. It is provided with center guide, and will plane top and bottom and single edge two pieces each 12 inches wide.

Feed Works. There are six feed rolls, powerfully geared to secure good strong feed, and are arranged to lift parallel. The in-feeding rolls are provided with a device by which the operator can raise them quickly to receive material of excessive thickness.

Adjustments. The in-feeding rolls are raised and lowered by a hand-wheel at entry end of machine. Delivering roll and plate over the under head are raised in one operation. This plate can be raised for access to under head instantly.

When called for, power raise will be applied to top section of machine at an extra cost.

Cutter Heads. All heads are four-sided, slotted on four sides. The top and under heads are provided with our patent adjustment to prevent end play. The side head spindles are also provided with adjustment for the same purpose, and have substantial top support, as shown by the engraving. This can be easily removed when matcher heads are to be applied.

Every Part or Piece of the machine has a number cast or stamped upon it, so that by simply giving the number of the machine and the number on the part wanted, duplicates may be readily ordered by wire or by mail.

BELTING REQUIRED.

Two Top Head Belts, each 21 feet 3 inches long, 5 inches wide.

One Under Head Belt, 20 feet 3 inches long, 5 inches wide.

Two Side Head Belts, each 22 feet 6 inches long, 4 inches wide.

One Feed Belt, 16 feet long, 3 inches wide.

In machine with under head at out-feeding end,

The Under Head Belt, 23 feet 2 inches long, 5 inches wide.

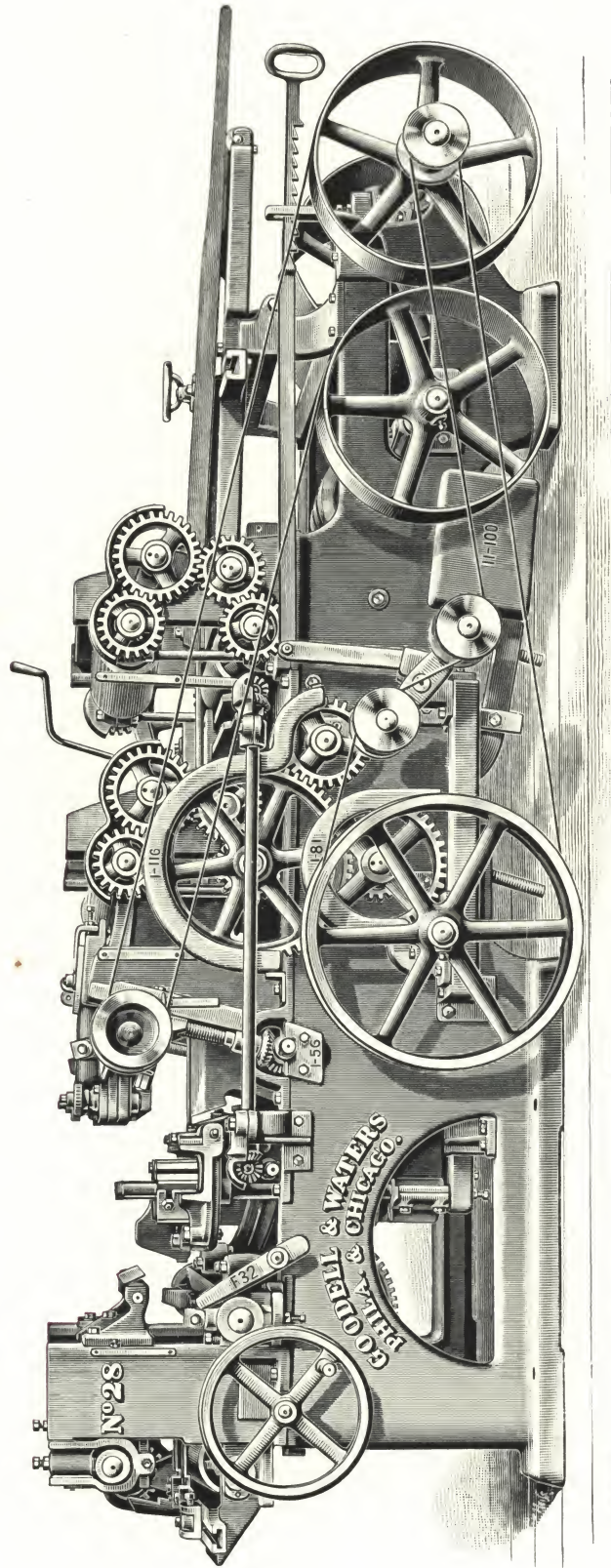
SIZE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 153—As a Sizer, Four Sides, 27 x 12..... (and will Double Surface 28 x 12.)	16 x 10	850	12,000	Harsh.

See Opposite Page for Description.

Fig. 154.

GOODELL & WATERS'

No. 28, Planer and Matcher.



Built in Two Sizes: Working 14 x 8 and 20 x 8.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 154.

GOODELL & WATERS'

No. 28, Planer and Matcher.

CONSTRUCTION. This machine is designed for general planing mill and light car shop work. It is heavy and is substantially braced. All the journals are large and well proportioned. The working parts are accurately finished and run very easily.

Capacity. It is built in two sizes, working 14 x 8 and 20 x 8. Both machines will match or joint material to the full width. It will be readily seen that a machine of such capacity is especially well suited for mills where a wide range of work must be done on one machine.

Feed Works. There are six feed rolls, powerfully geared, with a strong, steady feed. The upper rolls are arranged to raise parallel with the bed of the machine.

Adjustments. The in-feeding upper rolls are adjustable independently by a crank. The delivery upper roll and pressure plate over the under head are set at one operation, saving considerable time over the usual method of adjusting each independently. The long guide is moved and locked by a single device in combination with the right hand side head.

Cutter Heads. The upper and lower heads are four-sided, slotted on two sides. A patented device to prevent lateral motion of the heads is supplied. It works very satisfactorily and is useful when beading is to be done.

Every Part or Piece of the machine has a number cast or stamped upon it, so that by simply giving the number of the machine and the number on the part wanted, duplicates may be readily ordered by wire or by mail.

BELTING REQUIRED.

Two Top Cylinder Belts, each 19 feet 8 inches long, 5 inches wide.

One Under Cylinder Belt, 19 feet 2 inches long, 5 inches wide.

Two Matcher Belts, 20 feet 10 inches long, 3 inches wide.

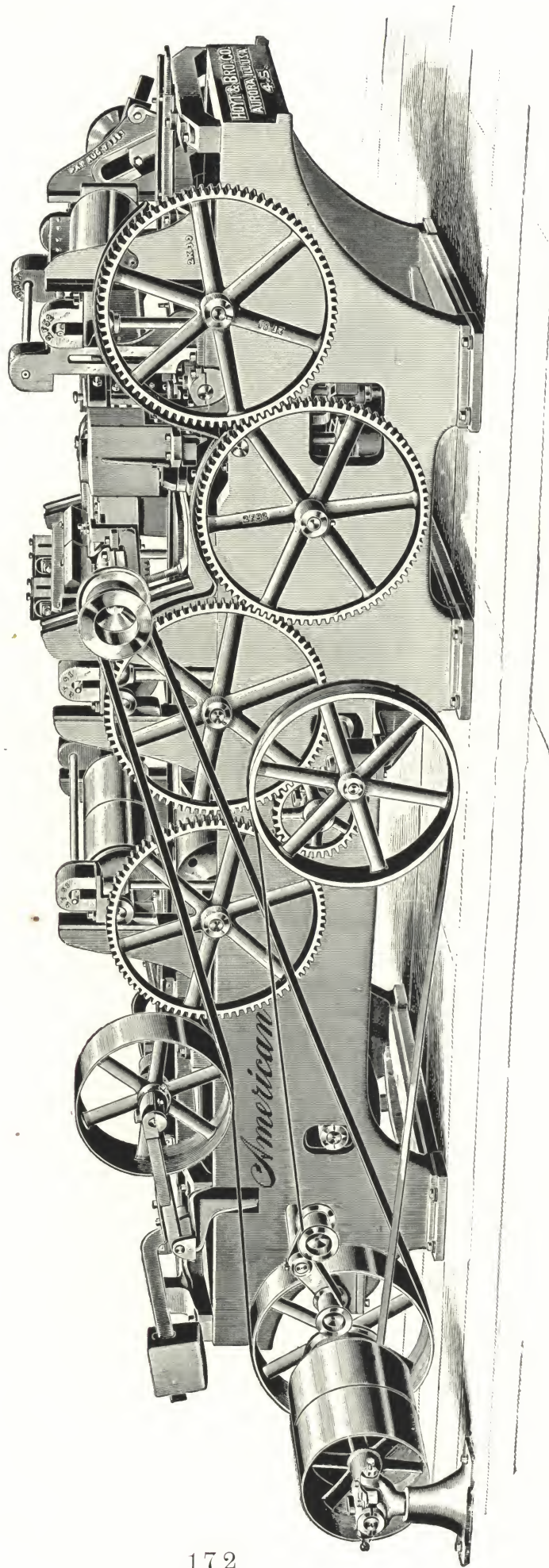
One Feed Belt, 18 feet long, 3 inches wide.

SIZE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 154 —To Work Four Sides, 20 x 8.....	14 x 8	900	9,500	Hatred.
Fig. 154 A—To Work Four Sides, 14 x 8.....	14 x 8	900	8,200	Haunter.

See Opposite Page for Description.

Fig. 155.

HOYT & BROTHER CO.'S
No. 4, Patent Roller Feed Sizer.



This machine will Surface on Two Sides, 30 x 8, and on Four Sides, 28 x 8.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 155.

HOYT & BROTHER CO.'S

No. 4, Patent Roller Feed Sizer.

WE illustrate on the opposite page our No. 4 Six Roll Sizer. It will dress on one or both sides and one edge, two strips from $\frac{3}{8}$ square to 12 x 8 inches, at the same time; or one strip on four sides from $\frac{3}{8}$ x 2 to 28 x 8 inches. Ordinary flooring and ceiling, also double surfacing up to 8 x 30 inches, may be done on this machine.

The Two First Top Rolls are each divided into two sections, and so arranged internally that although placed on a straight shaft, they have the same power to feed as a solid roll, whether used separate or together, and each section will yield independently, consequently will feed two boards of greatly varying thicknesses at the same time with perfect pressure on both. Rolls are $9\frac{1}{2}$ inches in diameter.

The Cylinders are made of steel. Journals are $2\frac{1}{2}$ inches diameter, and have extra long bearings. Pulleys on upper cylinder are double flanged, and are close to the boxes. Knives are interchangeable on upper and lower cylinders.

The Lower Cylinder Boxes are three in number, and yoked together; are adjustable for more or less cut. The outer box is next the pulley, and has special take-up arrangement, should it wear faster than the others. The pressure bars may be simply lifted out for convenience in setting knives, and replaced without requiring adjustment.

The Upper Cylinder is double locked; has divided chip-breaker and pressure rolls. The bed underneath is of steel, and may be easily removed for re-dressing, should it ever become necessary. The matcher stocks are similarly arranged.

The Side Spindle supports or matcher stocks are suspended from the horn bed, and may be each separately and positively locked. They carry upper or third bearings, that support the 8-inch side-heads.

We use counter balanced binders for upper cylinder belts (which should be endless), thus making these machines the strongest belted of any on the market.

Has four rates of feed, 40, 60, 80 and 100 lineal feet per minute.

We furnish with each No. 4 Sizer the knives on the cylinders, one pair 8-inch side-heads and knives, one pair Shimer flooring heads, one pair three-wing gun metal heads, with one set each 2-inch matcher bits, 2-inch jointer bits, and 1-inch jointer bits, and all necessary wrenches.

BELTING REQUIRED.

For Upper Cylinder (two endless belts), 21 feet $7\frac{1}{2}$ inches, 6 inches wide.

For Lower Cylinder, 26 feet of 6-inch.

For Side Heads, 47 feet 2 inches of 5-inch.

For Feed, 18 feet 10 inches, 4 inches wide.

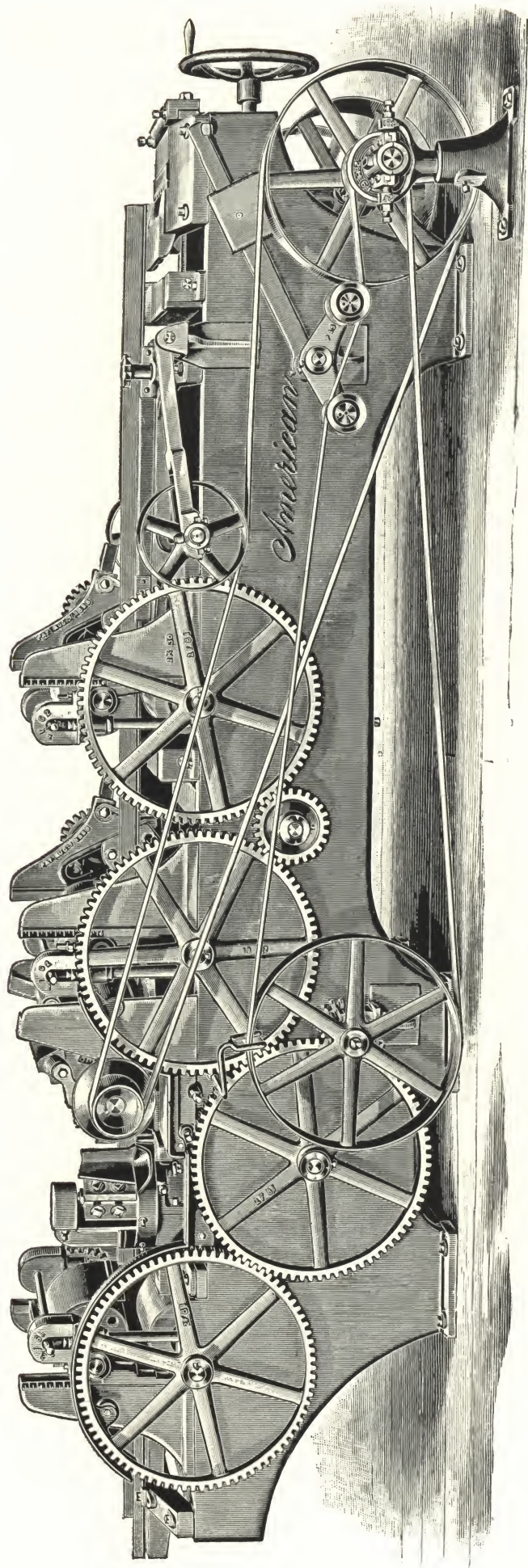
	SIZE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 155	—As a Sizer, Four Sides, 28 x 8.....	16 x 10	900 to 1,000	12,000	Hazard.
Fig. 155 A	—To Double Surface, 30 x 8.....	16 x 10	900 to 1,000	12,000	Heap.

See Opposite Page for Description.

Fig. 156.

HOYT & BROTHER CO.'S

No. 3, Patent Roller Feed Surfacers and Sizer.



This machine will Surface on Two Sides, 19 x 8, and on Four Sides from 4 x 1 up to 19 x 8.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 156.

HOYT & BROTHER CO.'S

No. 3, Patent Roller Feed Surfacers and Sizer.

THE engraving on opposite page represents our No. 3 Perfect and Powerful Surfacers and Sizer, for surfacing one side and jointing one edge of one piece of lumber only at a time.

The machine will surface 19 inches wide and 8 inches thick, or will size from 4 x 1 up to 19 x 8.

The Cylinder is made of steel, and is slotted on two sides.

The Spindles are 2½ inches in diameter, with long bearings.

The Side Head is slotted on four sides. The driving pulleys on the cylinder are 6 inches in diameter. A peculiar feature of this machine is the swinging belt tightener to the belts on the cylinder.

The Main Guide is adjustable, and under complete control of the operator. It is moved to or from the side head by the hand wheel shown at the feeding-in end of machine.

We combine on this machine, in the detail of its manufacture, all of the special features of our New Series Improved Planers and Matchers, using, as far as is practicable, the same designs and patterns, but in all things having direct reference to the class of work it has to do. Where great strain comes, there great strength and weight is added.

The Pony Roll and chip-break to main cylinder are the same as used on New Series Improved Planers and Matchers, and are just as perfect as can be made. The chip-break to side head has 8-inch face. The side head has a top bearing to the spindle, and there is no vibration, let the cut be what it may.

We send with each machine full set of knives on cylinder and side head, and all necessary wrenches.

The machine discharges on four feeds, namely, 40, 60, 80 and 100 lineal feet per minute.

BELTING REQUIRED.

Two Endless Belts for Top Cylinder, 21 feet 8 inches, 6 inches wide.

One Belt for Side Head, 23 feet 8 inches, 6 inches wide.

One Belt for Feed, 18 feet 10 inches, 4 inches wide.

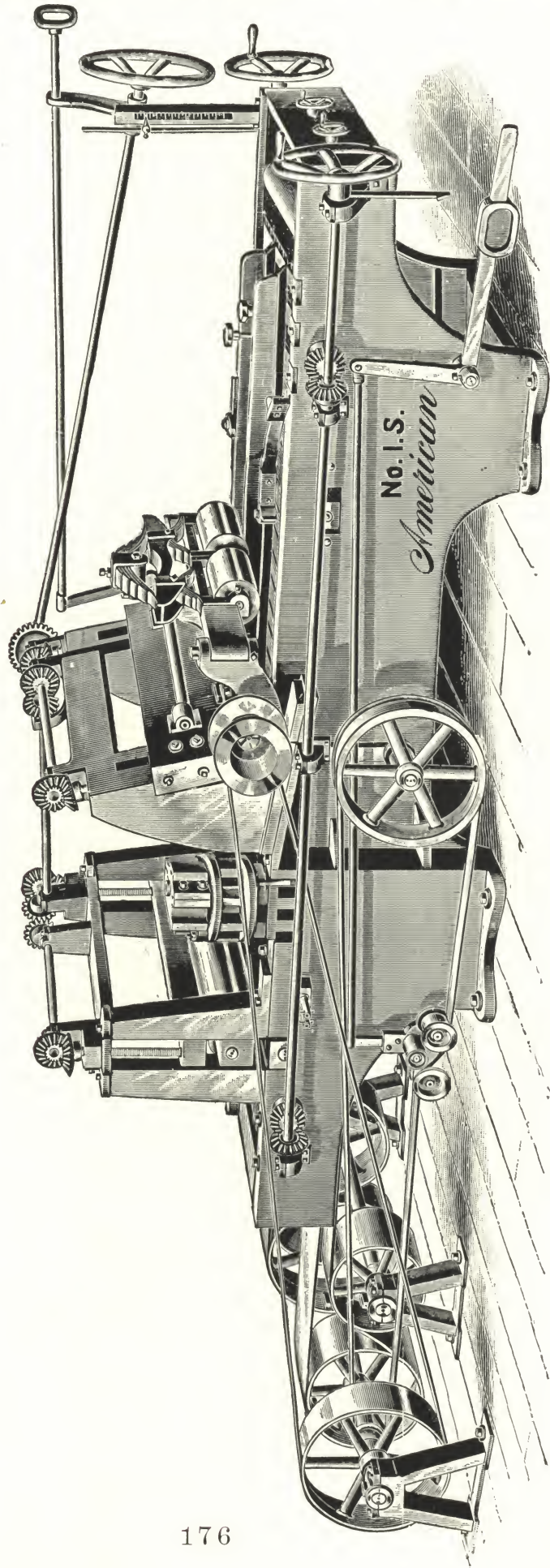
	SIZE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 156 —As a Sizer, Four Sides, 19 x 8.....		14 x 10	1,000	10,000	Heavily.
Fig. 156 A—As a Double Surfacers, 19 x 8.....		14 x 10	1,000	10,000	Hegira.

See Opposite Page for Description.

Fig. 157.

HOYT & BROTHER CO.'S

No. 1, Chain Feed Surfacing and Sizing Machine.



This machine is built as a Sizer, Three Sides, 24 x 12.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 157.

HOYT & BROTHER CO.'S

No. 1, Chain Feed Surfacer and Sizing Machine.

THE engraving on opposite page represents our No. 1 Surfacer and Timber Sizing Machine, which we briefly describe as follows:

The Cylinder is 32 inches long and of forged steel.

The Spindles are $2\frac{1}{4}$ inches in diameter.

The Cylinder Boxes are 12 inches long, and are yoked together on a heavy plate of iron, nearly 18 inches deep, and this is gibed on to the horns at each end with gibs 18 inches long. This insures perfection in adjustment to thickness. To this plate or head are attached the broken rolls and chip-breaks. The bar to which is attached this broken roll, etc., is hinged at one end, and may be opened (like a gate) giving free access to the head for setting or sharpening the knives.

The Two Side Heads are 12 inches high, and are slotted on four sides. They are steel, and the spindles are drawn out from the body of the forging, making head and spindles solid. Spindles $1\frac{3}{4}$ inches diameter. There is a top or third box to the side heads, and a perfect 12-inch chip-break. These side heads are moved in and out the same as on a planer and matcher.

The Chain runs on four steel laid bed pieces, 4-inch face, and has bearings lined with anti-friction metal. It is connected with our new style double steel link and $\frac{1}{2}$ -inch rivets. These links are drilled—not punched, as is usual. We use a double sprocket gear. It has compound feed gear and double pulley weighted belt tightener.

It has a pair of heavy feeding-out rolls, strongly geared. The upper one is connected by shaft and mitre gear with the cylinder yoke, and is adjusted simultaneously.

It can be changed in thickness and width as well when in motion as when idle. In width it is as quickly adjusted as a gang edger. It has three changes of feed, namely, 60, 80 and 100 lineal feet per minute. It will dress from $\frac{7}{8}$ to 12 inches thick.

Will Surface one side and one edge of two pieces at the same time, from 4 x 1 to 12 x 12, or the guides may be moved over and dress one side and one edge up to 24 x 12.

It is belted entirely from the tail end of the machine, and yet the runner or operator has perfect control of all adjustments and motion.

When used for sizing two pieces at the same time, each piece may be run in the center of the broken or divided rolls. This gives full surface bearing on the lumber and equalizes the pressure.

It will care for all the piece stuff of a saw mill having 150,000 capacity per day of ten hours.

BELTING REQUIRED.

Top Cylinder, 52 feet 2 inches, 6 inches wide.

Side Heads, 40 feet 2 inches, 6 inches wide.

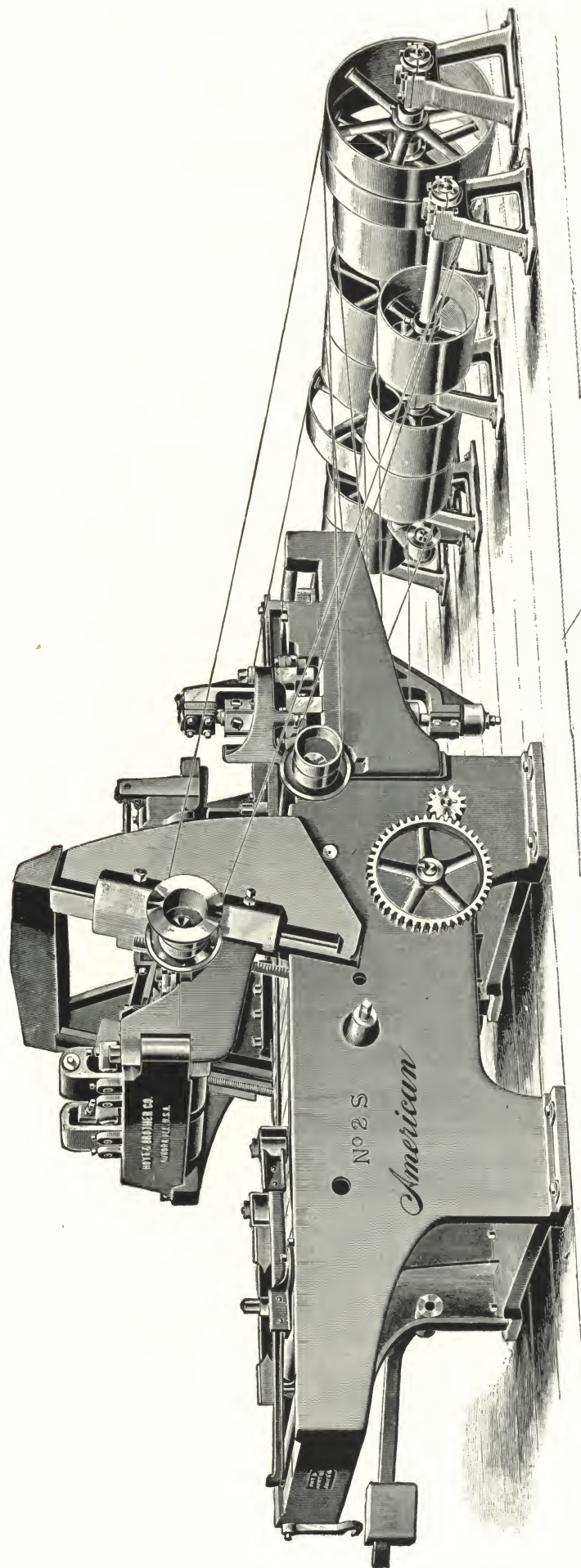
Feed, 24 feet 9 inches, 4 inches wide.

SIZE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 157—As a Sizer, Three Sides, 30 x 12.....	16 x 12	1,000	17,000	Helical.

See Opposite Page for Description.

Fig. 158.

HOYT & BROTHER CO.'S
No. 2, Endless Bed Sizer.



This machine is built in two sizes, 24 x 8 and 24 x 12, and will Double Surface 30 x 14.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 158.

HOYT & BROTHER CO.'S

No. 2, Endless Bed Sizer.

THE cut on the opposite page represents our Endless Bed Double Cylinder Surfer and Sizer, surfacing 30 inches wide and from $\frac{3}{8}$ to 14 inches thick. It has two side heads, slotted on four sides, and carrying 8 or 12-inch knives, as ordered. It will surface one or both sides and joint one edge of two pieces, at the same time, from 4 x 1 to 12 x 8 or 12 x 12. Two stock boards may be surfaced at same time without removing the center guide. When desired, the guide may be quickly removed.

The Cylinders are made of forged steel.

The Side Heads are made in same manner as cylinders, and are slotted on all four sides. They are supported by a third or top box, and there can be no tremble or vibration in the heads, let the cut be ever so heavy. The spindles run on a bronze step, in oil chambers, and never heat. The chip-breakers to the side heads are laid with steel in 2-inch sections, and, as the greater portion of sizing is 2-inch, the lower section can be replaced when worn without removing the upper section.

The Chain runs on three steel-laid bed pieces. The lags have patent anti-friction bearings, and are connected at each end with two steel links, each 9-16 inches thick, placed together between the lugs and connected with $\frac{1}{2}$ -inch rivets. These links are drilled, not punched, and have a perfect bearing on the rivet. The rivet is headed down on the lug instead of the link, and there is nothing overhung as in the old way. Double sprocket gear is used, and this, with gearing for feed compounded on both sides of the machine, makes it run exceedingly strong and consume light power.

This Machine is built with the divided or broken rolls, $5\frac{1}{4}$ inches in diameter (allowing easy entrance of the lumber), and modern chip-breakers lying near the cylinder, so connected with the large rolls as to be governed by them, and yet having the required pressure. The rolls and chip-breaks have independent oscillation and independent pressure—that is, they follow the surface of the lumber even if thick on one edge and thin on the other.

These rolls and their operative mechanism are easily swung away or opened like a gate, giving access to the cylinder for setting or sharpening knives. There are two pony rolls behind the cylinder, making three rolls and the chip-break to hold the lumber down on the chain.

The Pressure Bed over the under cylinder is carried with the top cylinder, and consequently is always in line. It has its separate adjustment, and is hinged or made to turn back out of the way when setting or sharpening the knives.

The Machine is belted, as shown in engraving, entirely from the rear end, and has great belt power. The top cylinder is belted close to the boxes, and thus avoids danger of springing the spindles with the heaviest cut. Special attention is called to the belts to side heads. They run over a carrier and in a nearly horizontal position, giving great surface bearing on the pulleys, besides running free from shavings and dirt on the floor.

With each order is sent a blue print, giving all necessary information regarding setting of machine and counter-shaft; a full set of wrenches, and the knives on all cylinders.

Feed: 40, 60 and 80 lineal feet per minute for machine with 8-inch side heads; 20, 30, 40, 60 and 80 for machine with 12-inch side heads.

BELTING REQUIRED.

Top Cylinder, 52 feet of 6-inch.	Side Heads, 37 feet 9 inches of 6-inch.
Bottom Cylinder, 21 feet 3 inches of 5-inch.	Feed, 24 feet 2 inches of 4-inch.
Feed, for machine with 12-inch heads, 36 feet 2 inches of 4-inch, and 16 feet of 5-inch.	

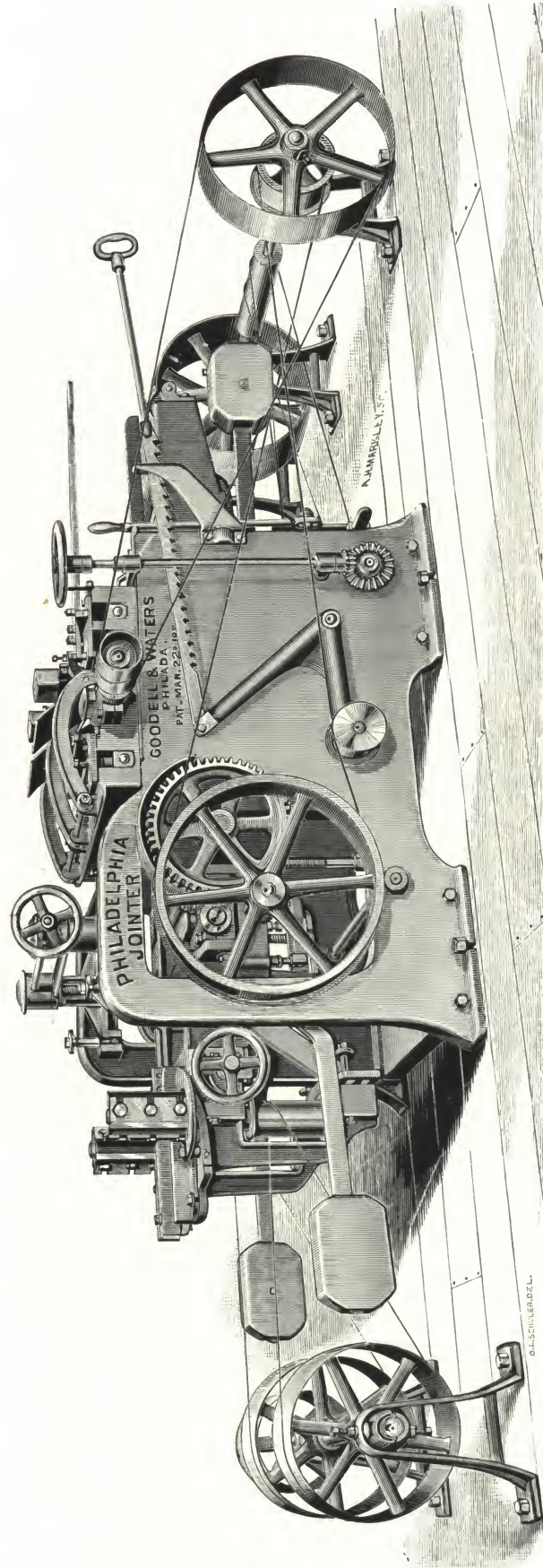
	SIZE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 158	—As a Sizer, Four Sides, 30 x 12. (and will Double Surface 30 x 14.)	16 x 10	1,000	10,500	Hempen.
Fig. 158 A	—As a Sizer, Four Sides, 30 x 8. (and will Double Surface 30 x 14.)	16 x 10	1,000	10,500	Herbage.

See Opposite Page for Description.

Fig. 159.

GOODELL & WATERS'

Endless Bed Double Surfacers, with Jointer Heads Attached.



Patented March 12, 1881, August 26, 1884, October 12, 1886.

We build this machine as a **Double Surfacers** in two sizes, working 26 inches and 30 inches wide, up to 14 inches thick; and as a **Four-Side Machine** in two sizes, working 22 x 8 and 26 x 8 inches. The former four-sided machine will Double Surface 26 x 14 inches, and the latter 30 x 14 inches.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 159 B.

GOODELL & WATERS'

Endless Bed Double Surfacers.

THE engraving on the opposite page represents the Philadelphia Endless Bed Double Surfacers and Jointer. This machine is also built as a Double Surfacers only. The Double Surfacers is built in two sizes to double surface 26 inches and 30 inches wide, both up to 14 inches thick. The same machine with jointer heads attached is built in two sizes to double surface 26 inches and 30 inches wide, up to 14 inches thick.

The 26-inch Machine with center guide will work two courses at one operation on both sides, and one edge from 1 inch to 8 inches thick, and from 3 inches to 11½ inches wide.

The 30-inch Machine will work two courses of the same thickness as the 26-inch, and from 3 inches to 13½ inches wide. The 26-inch machine, without center guide, will work four sides from 1 inch to 8 inches thick and from 3 inches to 22 inches wide. The 30-inch will work four sides of the same thickness and 26 inches wide.

These Machines do their work, both heavy and light, equally well throughout the whole range, planing common boards and large timbers without change except in thickness.

These Machines are perfect in general construction, in the device for planing unevenly sawed lumber; convenience of access to both upper and under heads; and speed, accuracy and ease with which changes in thickness can be made. The patent sectional rolls and pressure bars will hold down and feed equally well two courses of unevenly sawed lumber. The improved sectional hinged pressure bars can be set close to the knives, working nearly on a radius with them, and can be swung clear over and away from them while filing or setting. The pressure bar over the under cutter-head can be turned away, permitting easy access to the knives.

The Handles working the devices for raising and lowering the bed, both by hand and power are at the top of the machine and near the scale for indicating the thickness. The ways on which the lag-bed travels have automatic oilers and scrapers.

The Four-Sided Machine will surface on two sides up to 14 inches thick, the full width of the machine without removing the jointer heads.

The Jointer Heads are run by an independent countershaft placed at the out-feeding end of machine, and should be 6 feet from the spindles. The main countershaft should be set 6 feet from center of top cylinder on the floor line.

BELTING REQUIRED.

Two Upper Cylinder Belts, 16 feet 10 inches long, 5 inches wide.

One Lower Cylinder Belt, 20 feet 10 inches long, 5 inches wide.

One Feed Belt, 20 feet 8 inches long, 3½ inches wide.

Two Raising Belts, 11 feet 1 inch long, 2½ inches wide.

Add for the Four-Side Machine.

Two Side Head Belts, each 15 feet long, 4 inches wide.

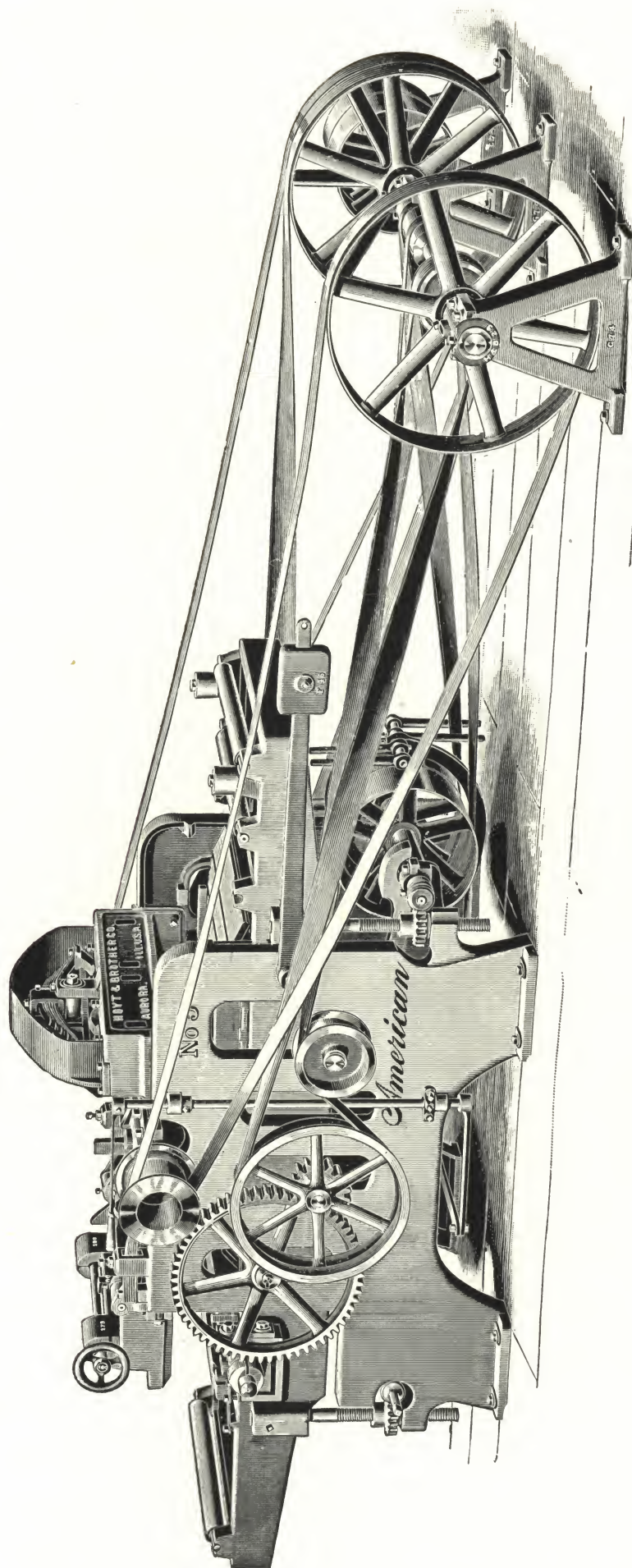
	SIZE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 159 —Double Surfacers and Jointer, 30 inches wide.....		12 x 18	900	7,500	Heresy.
Fig. 159 A— “ “ “ “ 26 “ “		12 x 18	900	7,000	Heretic.
Fig. 159 B—Double Surfacers, 30 x 14 inches		12 x 18	900	6,000	Hereoic.
Fig. 159 C— “ “ 26 x 14 “		12 x 18	900	5,500	Hermit.

See Opposite Page for Description.

Fig. 160.

HOYT & BROTHER CO.'S

No. 5, Patent Double Chain Feed Surfacer.



We build this machine to dress 26 inches wide and from $\frac{3}{8}$ to 8 inches thick.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 160.

HOYT & BROTHER CO.'S

No. 5, Patent Double Chain Feed Surfacers.

THE accompanying engraving shows our No. 5 Endless Bed Surfacers.

The main features of this Surfacers are great simplicity in construction, more than ordinary strength and capacity, and perfect results in its work.

It is made to dress 26 inches wide and from $\frac{3}{8}$ to 8 inches thick. Has three changes of feed, namely, 40, 60 and 80 lineal feet per minute. The feed pulleys are of our shell pattern, such as we use on all of our machines, and requires but one standard feed belt, the slack being taken up by our weighted belt tightener, as shown in the large engraving.

The Table is supported on four screws, $1\frac{3}{8}$ inches diameter, and is guided by planed ways at or near each supporting screw. The worm nuts and gear for raising and lowering the table—all connected and operated by hand or power, as may be desired—have the merit of being very large and strong, and should last out the life of the machine.

The Divided or Broken Roll on this Surfacers has connected with it a chip-breaker of superior pattern. The spring giving pressure to the rolls is very long, with ends resting on an equalizing bar, laying between the spring and rolls, and with this long spring and equalizing bar we are enabled to give a lift of $1\frac{1}{2}$ inches above the cut of cylinder.

The Design of the sides to the Surfacers will commend themselves, in this, that they are cut away at the rear end, leaving the under cylinder and attachments all clear, and more easy of access when setting or sharpening the knives, than the upper cylinder of this or any other machine on the market.

The Boxes to lower cylinder are yoked together, and are placed between the supports to the table, not outside, as is common to many double surfacers. This method of building entirely obviates the vibration or tremble of cylinder. The bars beside the under cylinder are of new pattern, and are supported at each end on springs. There are no nuts or bolts to loosen in taking out or replacing these bars.

The Cylinders are made of hammered steel, with spindles or arbors $2\frac{1}{8}$ inches diameter and 10-inch bearings. Knives are interchangeable on top and bottom cylinders.

We specially commend the chain. It is connected with steel links and $\frac{1}{2}$ inch steel rivets, and our method in this connection commands universal approval. We use the double sprocket gear. The bearings have our patent anti-friction metal linings. This gives protection from excessive wear, and prevents cutting, as is the case where iron runs on iron or steel. The chain runs on steel laid bed pieces.

BELTING REQUIRED.

41 feet 4 inches, 5 inches wide.
25 feet, 4 inches wide.

20 feet 6 inches, 3 inches wide.
27 feet 3 inches, $2\frac{1}{2}$ inches wide.

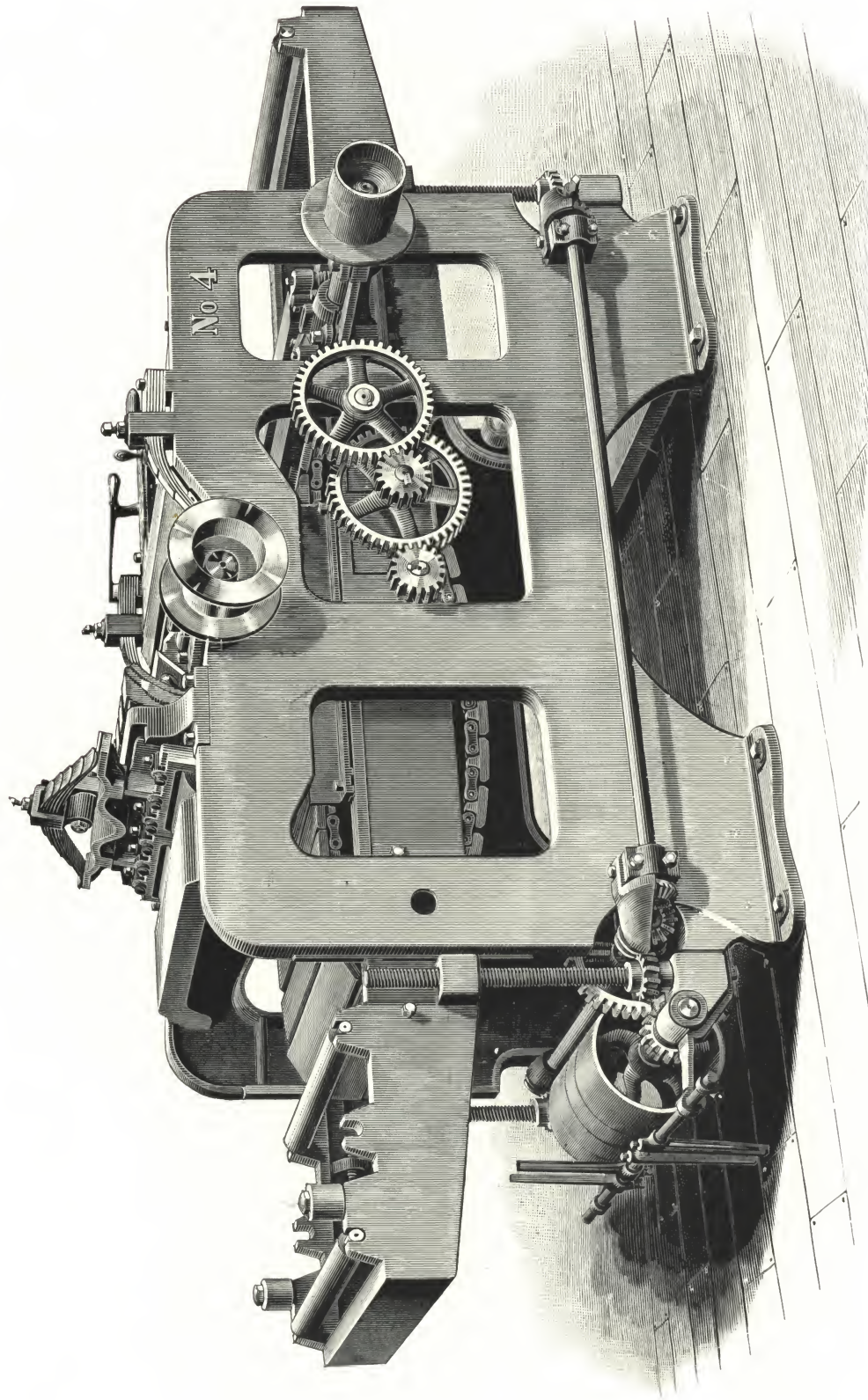
SIZE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 160—To Double Surface 26 x 8.....	14 x 8	850	5,800	Higgler.

See Opposite Page for Description.

Fig. 161.

HOYT & BROTHER CO.'S

No. 4, Patent Double Cylinder Chain Feed Surfacer.



We build this machine to dress 26 inches wide and from $\frac{3}{8}$ to 12 inches thick.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 161.

HOYT & BROTHER CO.'S

No. 4, Patent Double Cylinder Chain Feed Surfacer.

THIS Surfacer has some special features that should sharply commend it to the trade.

It is made to dress 26 inches wide and from $\frac{3}{8}$ to 12 inches thick. Has two changes of feed, namely 60 and 80 lineal feet per minute, and is easily and quickly changed, using but one standard feed belt. The binder or tightener lever, with double pulleys for the feed, is attached to the table, and raises and lowers with it. There is a floor stand with idle pulley (not shown in engraving) that stands on the right hand of machine, to be used in taking up the slack of belt to under cylinder, when dressing lumber 3 inches thick and over.

The Table has its support on four screws, $1\frac{3}{8}$ inches diameter, connected by shafts, miter gear, worm gear and nuts, all operated by hand, or by the power attachment for adjustment, as shown at the front or receiving end of machine. This is governed by the hand lever shown on top and at rear end of machine, where is placed the index.

The Surfacer is built with our broken or divided roller and sectional chip-breaker, and there is no better made. These rollers have a lift of $1\frac{1}{2}$ inches, that is they will take in lumber up to $2\frac{1}{4}$ inches thick when set for 1 inch. There are two pony rolls behind the top cylinder, each provided with steel scrapers.

The Bed over the under cylinder is hinged on swivel bolts, and is turned back like a chest lid, when setting or sharpening knives. When using the upper cylinder only, this plate may be raised with the hand-wheel on top of bed.

Our Cylinders are made of hammered steel, and carry four knives. The spindles are $2\frac{1}{8}$ inches diameter, Knives are interchangeable on top and bottom cylinders.

The Chain is a special feature. It is connected by steel links (holes drilled, not punched, as is usual with chain links), and steel rivets. Has bearings containing anti-friction metal which gives freedom from the usual cutting, and consequently long life. We use double instead of single sprocket gear.

The Under Cylinder Boxes are yoked together, and are adjustable vertically. The bars beside the under cylinder rest (each end) on coil springs — holding the lumber firmly up against the bed, preventing chatter and largely reducing friction. There are no nuts or bolts to loosen in taking out these bars, and when replaced the machine is ready for work without further adjustment.

Notice our compound feed gear on right hand side of machine.

This Surfacer has a possible capacity of 96,000 feet stock boards, dressed on one or two sides, in ten hours, and has the strength to stand up under any class of work to its entire limit.

BELTING REQUIRED.

41 feet 4 inches, 5 inches wide ; 44 feet 3 inches, 3 inches wide ; 25 feet, 4 inches wide.

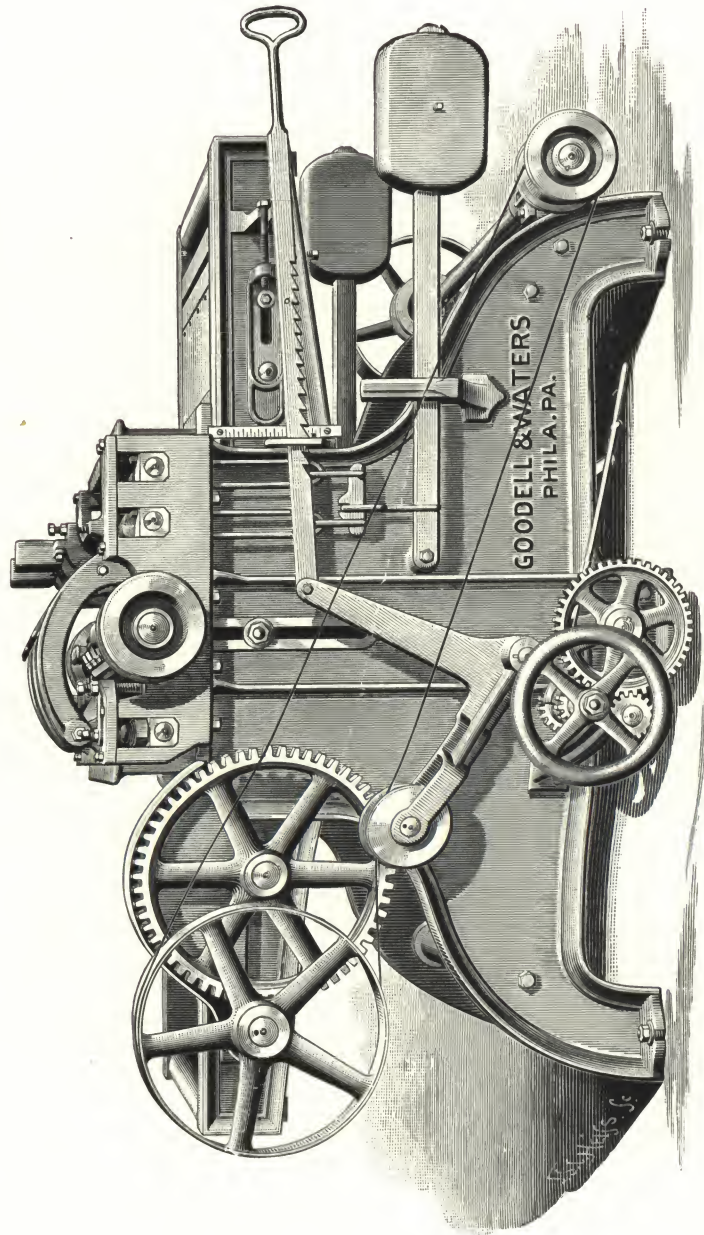
SIZE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 161—To Double Surface 26 x 12.....	14 x 8	850	6,300	Hillock.

See Opposite Page for Description.

Fig. 162.

GOODELL & WATERS'

26-Inch Endless Bed Single Surfacers.



We build two sizes, to Surface 26 and 30 inches wide, both working 10 inches thick.

Fig. 162.

GOODELL & WATERS'

26-Inch Endless Bed Single Surfacers.

Patented March 22, 1881.

THIS is a **very powerful** light running machine, built from **new patterns** and represents the latest ideas in machines of its type. It is built in two sizes, working 26 and 30 inches wide, both up to 10 inches thick.

This Single Surfacers is intended for timber dressing and the heaviest grades of surfacing.

All Parts of the machine are made strong and durable for this kind of work.

It will do as good work as roll feed planers of like weight and capacity. We wish to call especial attention to the patent sectional feed rolls, the simplest and most perfect device for feeding two courses of unevenly sawed lumber.

Changes in Thickness can be made by raising or lowering the bed either by hand or power while the machine is running. The ways on which the lag bed travels are carefully prepared and have automatic oiling device and scrapers.

The Lags are all carefully joined by a new system of links and rivets.

This is an important part of a machine of this type, and much depends upon the smooth running of the bed in order to do good work. If the bed does not run with ease it is likely to cause a wavy surface on the lumber.

These Machines are arranged to feed at any rate of speed desired, and customers desiring a specially fast feed should make that fact known when placing order.

The Cutter Head is made of a solid steel forging, carries three knives and is belted at both ends.

The Feed is under perfect control of the operator.

All Adjustments are within convenient reach and may be quickly made.

The counter-shaft may be placed on the floor or ceiling, whichever is more convenient.

BELTING REQUIRED.

One Feed Belt, 14 feet long, 3 inches wide.

One Feed Belt, 10 feet 6 inches long, 2 inches wide.

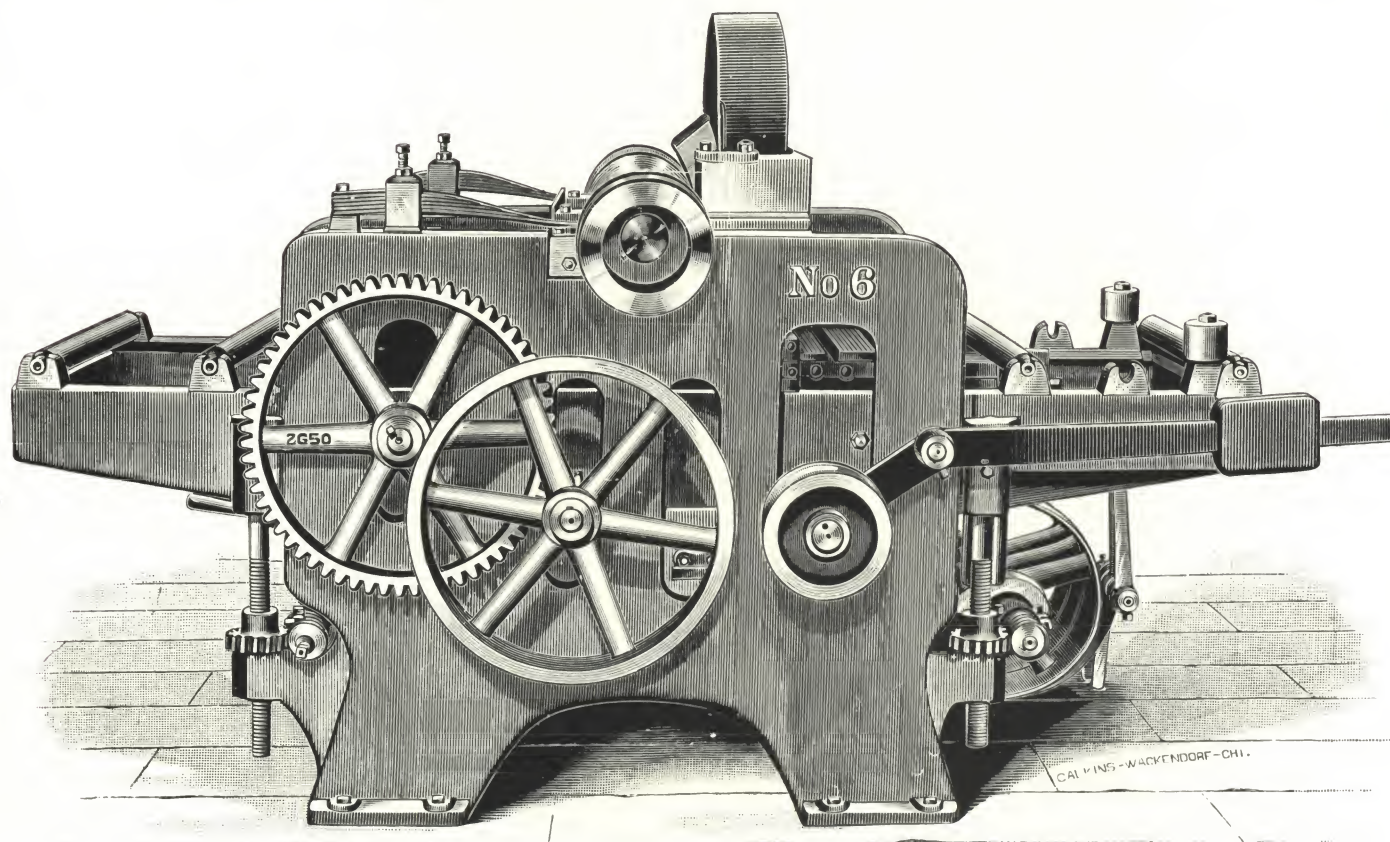
SIZE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 162 —To Single Surface 30 inches wide.....	12 x 8	900	4,500	History.
Fig. 162 A—To Single Surface 26 inches wide.....	12 x 8	900	4,000	Hobnail.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 163.

HOYT & BROTHER CO.'S

No. 6, Single Cylinder Endless Bed Surfacer.



THIS Surfacer is made as far as possible from the same patterns as our No. 5 Double Surfacer, page 182, and has all of its simplicity, strength and capacity.

It will surface from $\frac{3}{8}$ to 8 inches thick, and 26 inches wide. Has three changes of feed, namely: 40, 60 and 80 lineal feet per minute. The feed pulleys are of our shell pattern, such as we use on all our machines, and require but one standard feed belt, the slack being taken up by the weighted belt tightener.

The Table is supported on four screws, $1\frac{3}{8}$ inches diameter, and is guided by planed ways at or near each supporting screw. The worm nuts and gear for raising or lowering the table—all connected and operated by hand or power, as may be desired—have the merit of being very large and strong, and should last the life of the machine.

The Divided or Broken Roll on this Surfacer has connected with it a chip-break of superior pattern. The spring giving pressure to the rolls is very long, with ends resting on an equalizing bar laying between the spring and rolls, and with this long spring and equalizing bar we are enabled to give a lift of $1\frac{1}{2}$ inches above the cut of cylinder. Mill men know the importance of this in dressing unevenly sawed lumber.

The Cylinder is made of hammered steel, and is finished $4\frac{1}{2} \times 4\frac{1}{2}$, with spindles or arbors $2\frac{1}{8}$ inches diameter and 10-inch bearings. The arbors are drawn out from the body of the forging, leaving head and arbors in one solid piece.

Belting Required: 41 feet 4 inches, 5 inches wide; 20 feet 6 inches, 3 inches wide; 27 feet 3 inches, $2\frac{1}{2}$ inches wide.

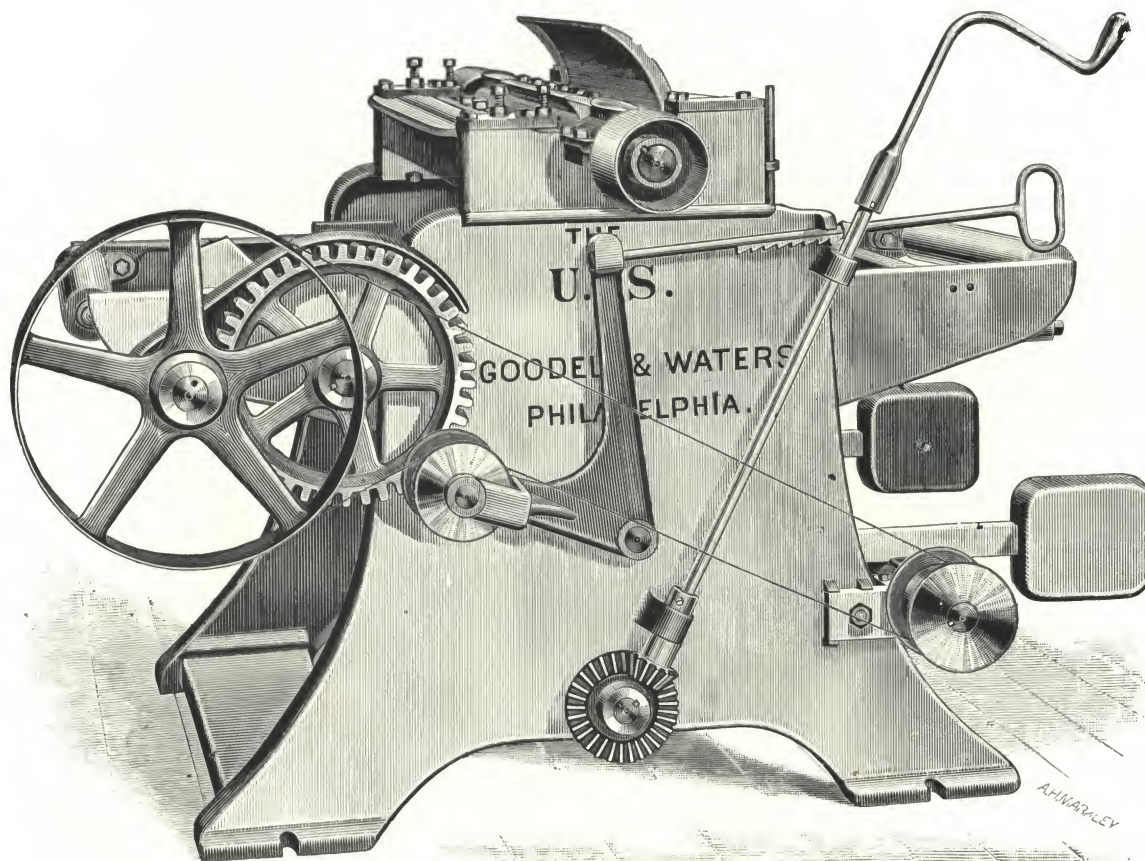
SIZE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 163—To Single Surface 26 x 8.....	14 x 8	850	4,700	Hollow.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 164.

GOODELL & WATERS'

24-Inch Endless Bed Single Surfacers.



THIS is a light running, strong machine, well suited for mills where larger machines are also in use, and for small mills where it would not be economical to use heavy machines when this one would answer.

It will Surface on one side 24 inches wide up to 8 inches thick. The counter-shaft may be placed on the floor or ceiling.

The Adjustments are few and easily made.

The Bed is Raised and Lowered by a crank at the feeding-in end, and may be done while the machine is in operation.

The Feed is controlled by a tightener, the handle of which is within convenient reach of the operator.

The Cylinder is forged steel, three-sided, and belted at both ends.

Belting Required: one feed belt, 8 feet long, 1½ inches wide; one feed belt, 10 feet 7 inches long, 3 inches wide.

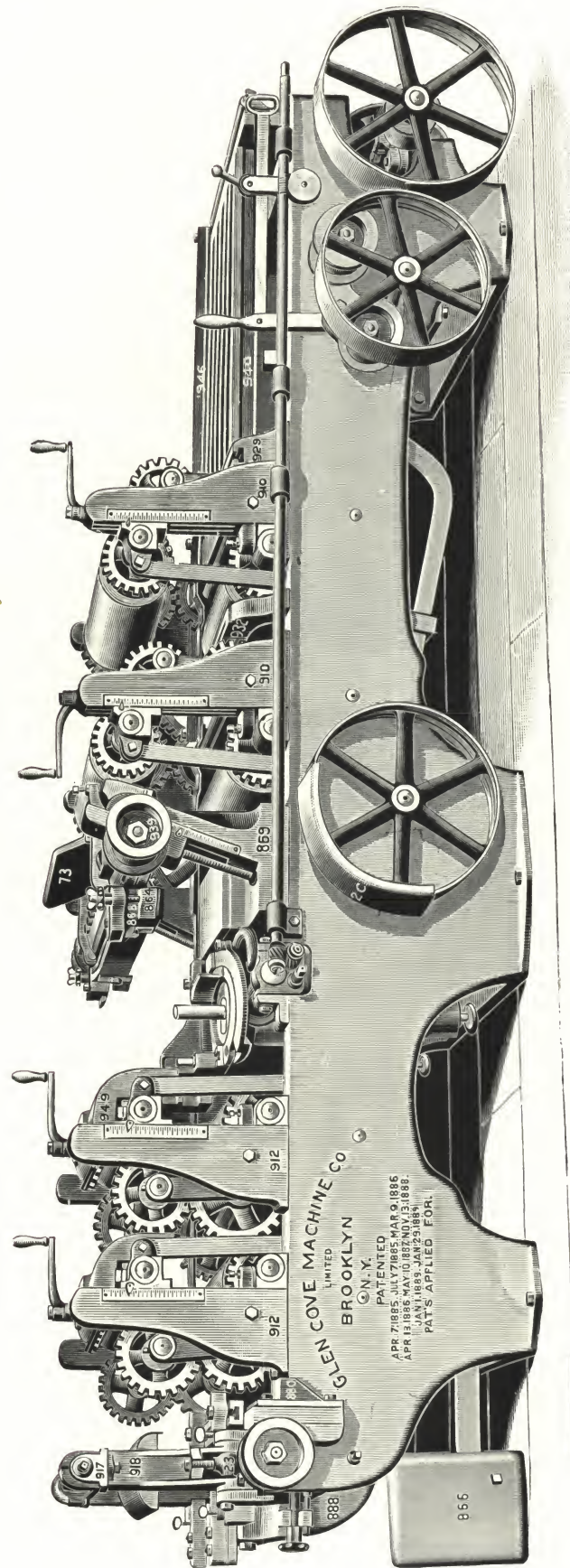
SIZE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 164—To Single Surface 24 inches wide up to 8 inches thick.....	12 x 8	950	2,600	Homage.

See Opposite Page for Description.

Fig. 165.

GLEN COVE MACHINE CO.'S

No. 1, Fast Feed Planer and Matcher.



24 inches wide; 8 inches hoist; Eight Feed Rolls.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 165.

GLEN COVE MACHINE CO.'S

No. 1, Fast Feed Planer and Matcher.

THE cut on opposite page illustrates our No. 1, 24-inch Fast Feed Planing and Matching Machine. It works lumber from $\frac{1}{4}$ inch up to 8 inches thick, and from 2 inches wide up to 24 inches wide on all four sides in one operation. It has eight feed rolls, geared by expansion at both ends. It is a powerful fast running machine, easily set up with patent parallel hoisting device to the roll and with each roll raised by a single screw, dispensing with the usual arrangement of beveled gears and shaft.

The Expansion Gear Shafts revolve in boxes, which is a decided improvement over running the expansion gears on stationary studs or shafts, and these parts can be oiled while the machine is in operation. The cutter-head boxes, both top and bottom, are yoked together, which prevents the boxes from getting out of line. The yoke and top cylinder, with its boxes, chip-breaker, presser-bar, etc., may be removed without in any way disturbing the bed or any other part of the machine.

The Presser-Bar or chip-breaker before the cut to the top cutter head is adjustable, close to or away from the cutting circle, upon a bar supported by radial arms free to raise and lower to different thicknesses of lumber. The bar after the cut of the top cutter-head and those on each side of the under cutter-head, are supported in housings cast solidly together and made adjustable to and from the cutting circle of the head to permit the use of moulding, beading or rabbetting cutters.

The Top and Bottom Cutter-Heads on all our machines are made of hard steel forged to size. The journals are drawn or forged out from the body of the head, producing the most perfect journal that can be made.

The Cutter-Head Pulleys are large in diameter and are carefully fitted to a true taper, and held there by a nut, which method avoids all chance of straining the spindle, or throwing the head out of balance.

All the shafting is of steel. Every part or piece of the machine has a number cast or stamped upon it, so that by simply giving the number, duplicates may be readily ordered by wire or letter.

All shafts and fittings, including bolts, screws and nuts, are finished to United States Standard sizes.

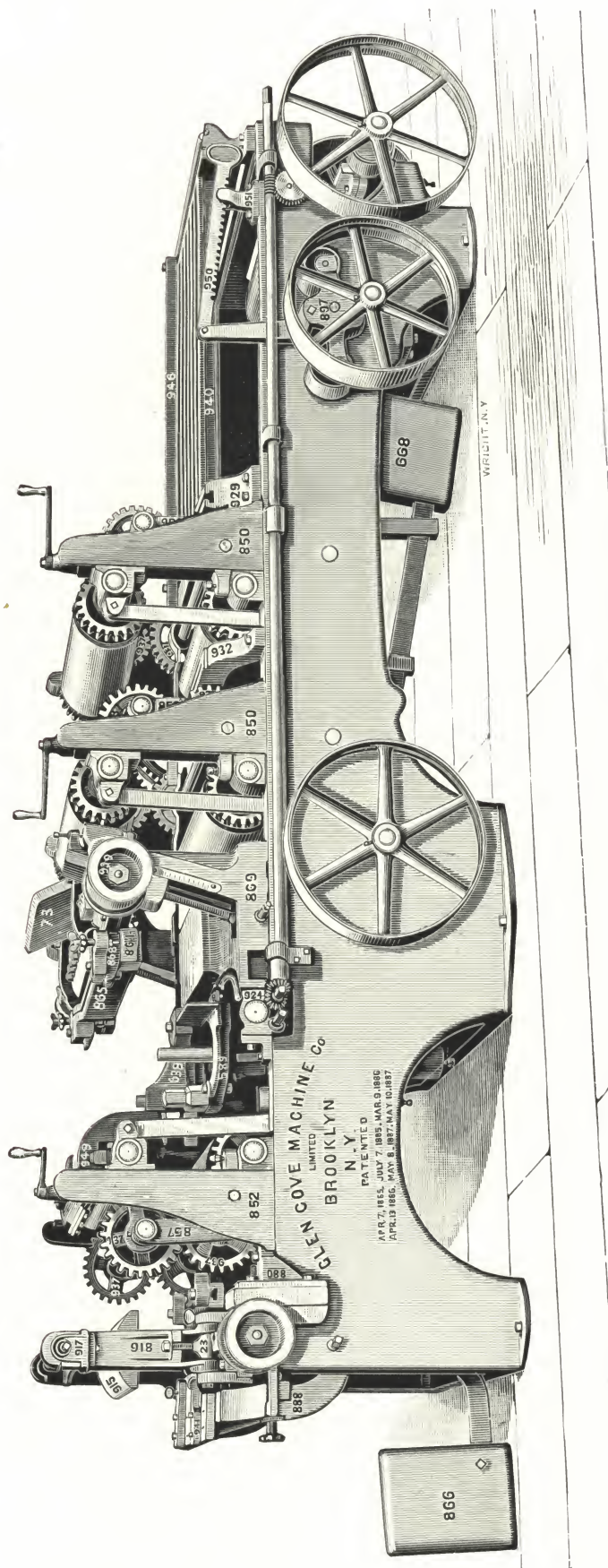
SIZE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 165—24 x 8	14 x 8	960	11,500	Hood.

See Opposite Page for Description.

Fig. 166.

GLEN COVE MACHINE CO.'S

No. 3, Fast Feed Planer and Matcher.



24 inches wide; 8 inches hoist; Six Feed Rolls.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 166.

GLEN COVE MACHINE CO.'S

No. 3, Fast Feed Planer and Matcher.

THE cut on opposite page illustrates our No. 3, 24-inch, Planing and Matching Machine, weighing 10,200 pounds. It works lumber from $\frac{1}{4}$ inch up to 8 inches thick, and from 2 inches wide up to 24 inches wide, on all four sides, at one operation. It has six feed rolls, powerfully geared.

By our simple and effective Patent Parallel Hoisting Device, the rolls are made to bear squarely across the face of the lumber, whether it be wide or narrow, giving them great traction power and insuring perfectly straight running.

Our Patented method of Revolving the Expansion Gear Shafts in Boxes, obviates the necessity of stopping the machine to oil these parts. The cutter head boxes, both top and bottom, are yoked together, which prevents the box from getting out of line and cramping the journals. The yoke and top cylinder, with its boxes, chip-breakers, pressure bar, etc., may be removed without in any way disturbing the bed or any other part of the machine. The platen plate under the cut of the top cutter head is secured to the cutter head bed by bolts from underneath the bed. Should the platen wear after long and hard running, it may be removed by loosening these bolts, planed up at a machine shop and replaced.

The Pressure Bar or chip-breakers, before the cut to the top cutter head, is adjustable close to or away from the cutting circle, upon a bar supported by radial arms, free to rise and lower to different thicknesses of lumber. The bar after the cut of the top cutter head is made adjustable to and from the cutting circle of the head, to permit the use of moulding, beading or rabbetting cutters.

The Cutter Head journals are long and large in diameter, and run in improved self-oiling boxes. The cutter head pulleys are large in diameter, and are not put on with keys or set screws, but are carefully fitted to a true taper and held there by a nut, which method avoids all chance of straining the spindle or throwing the head out of balance.

The Patented Weighted Chip-Breaker is held up to its work by a weight, and is so arranged that a steady and even pressure is always maintained. The arm does not travel on or above the surface of the matcher plate, but is pivoted below it, and rises only to a level with it, and cannot gum up or be clogged with shavings, and will always perform its proper work.

The Side Heads, when set, are firmly secured in place by means of our gripping device, and no amount of pressure from the edge of the board can force them back.

Above each matcher plate our adjustable pressure shoe, extending past the cut of the side head, presses upon the board at its edges only, holding it firmly down on the matcher plates, thus compelling a perfectly straight cut by the side heads, and always in the right place. The board is held firmly at its edges where the cutting is to be done.

All the shafting is of steel. Every part or piece of the machine has a number or letter cast or stamped upon it, so that by simply giving the number or letter, duplicates may be readily ordered by wire or letter.

All shafts and fittings, including bolts, screws and nuts, are finished to United States Standard Sizes.

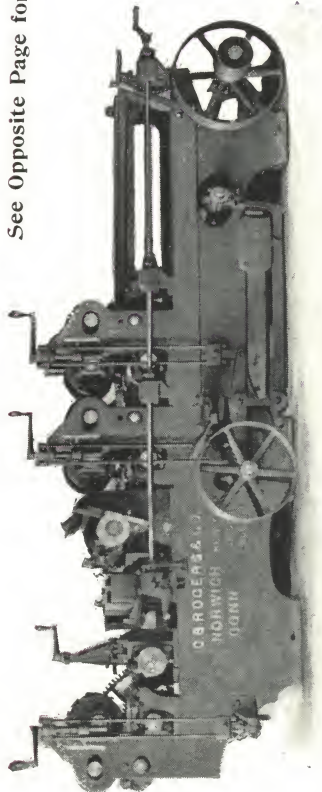
SIZE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 166—24 x 8.....	14 x 8	960	10,200	Hopper.

See Opposite Page for Description.

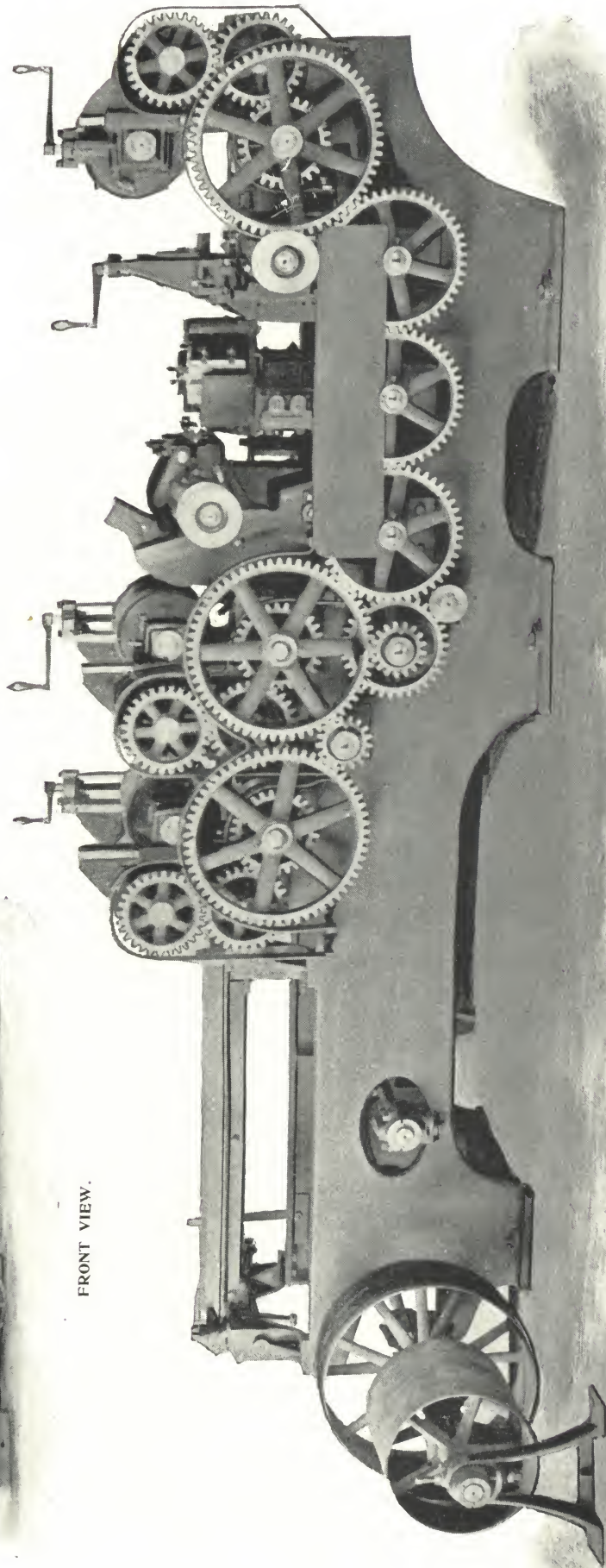
Figs. 167 and 168.

C. B. ROGERS & CO.'S

Nos. 1 and 3 Planers and Matchers.



FRONT VIEW.



REAR VIEW.

Built in Three Sizes: 15 x 6, 10 x 6, 9 x 6, with either Cylinder or Roll on End.

AMERICAN WOOD-WORKING MACHINE CO.

Figs. 167 and 168.

C. B. ROGERS & CO.'S

Nos. 1 and 3 Planers and Matchers.

THE Rogers Planers and Matchers are all built on one general line of construction and detail, varying only in size and proportion as well as in difference of position of lower heads, feeding out rolls and so forth, each machine being distinct and complete in itself and designated by numbers, as shown.

The Frames of these machines are all low and below the lowest level of the rolls and cylinders, making all working parts of the machine very easily accessible and permitting the completion of each section of the machine independent of the rest, insuring perfect construction and alignment. Frames are heavy and well ribbed, making an excellent support for cylinder bed plates, roll posts, etc. The top cylinder bed plate and support for the cylinder is very heavy and substantial, boxes carrying the cylinder are 10½ inches long, yoked together across the machine and sustain the pressure bar and bonnet chip-breaker, both of which are adjustable to and from the cut to variation of projection. Lower cylinder boxes are same as the upper and connected in yoke form attached to angle plates which in turn are attached to the frame. Adjustment of the cylinder is obtained through adjusting screws with check nuts. Cylinder can be raised or lowered at both ends, or either end, independent of the other. Pressure bar arranged to swing up from either side and the bars are both adjustable, and can be completely removed when desired, to allow of easy access to lower cylinder.

The Side Spindles are large, run in heavy yoked babitted boxes with special device for supporting and lubricating the lower end of the spindle. These yokes are supported on heavy flat cross bars and have very large bearing at upper end, adjusted by means of screws and nut. The nut being removable so that when worn to show back lash it can be readily replaced. The yoke is held in position on the bar, by means of two loose gibs and can be clamped in position by means of large hand wheel at the back. Side head has weighted chip-breaker swinging in circle with the cut.

The Feed on this machine is exceptionally strong and so arranged that cramping of the roll gears or boxes is impossible. We use a very heavy train of gears and our patented device for connecting the upper roll, which does away with all of the short studs and links used in the old style expansion. The only link in this device is the one connecting the top and first roll shaft boxes, this gear shaft box being the only one that is not fast in the frame. This is held in planed ways and has a movement of about 1¼ inches. The rolls are raised, lowered and weighted on one side only, weights being outside of the frame and easily operated, leaving the inside of the frame entirely unobstructed. The feed is stopped and started by means of tight and loose pulleys and shifter. A range of feed can be provided from 25 to 110 feet per minute.

The Regular Four Head Machines built in several sizes, as shown below and with six feed rolls, cylinder on the feeding out end or roll on the feeding out end as desired, are illustrated on the opposite page and clearly defined by numbers given below. The machines numbered 1, have cylinders on the end; machines numbered 3, have feed rolls on the end. In every other respect they are alike. These machines are both made to work the following sizes: 15 x 6, 10 x 6 and 9 x 6, and designated by numbers given below.

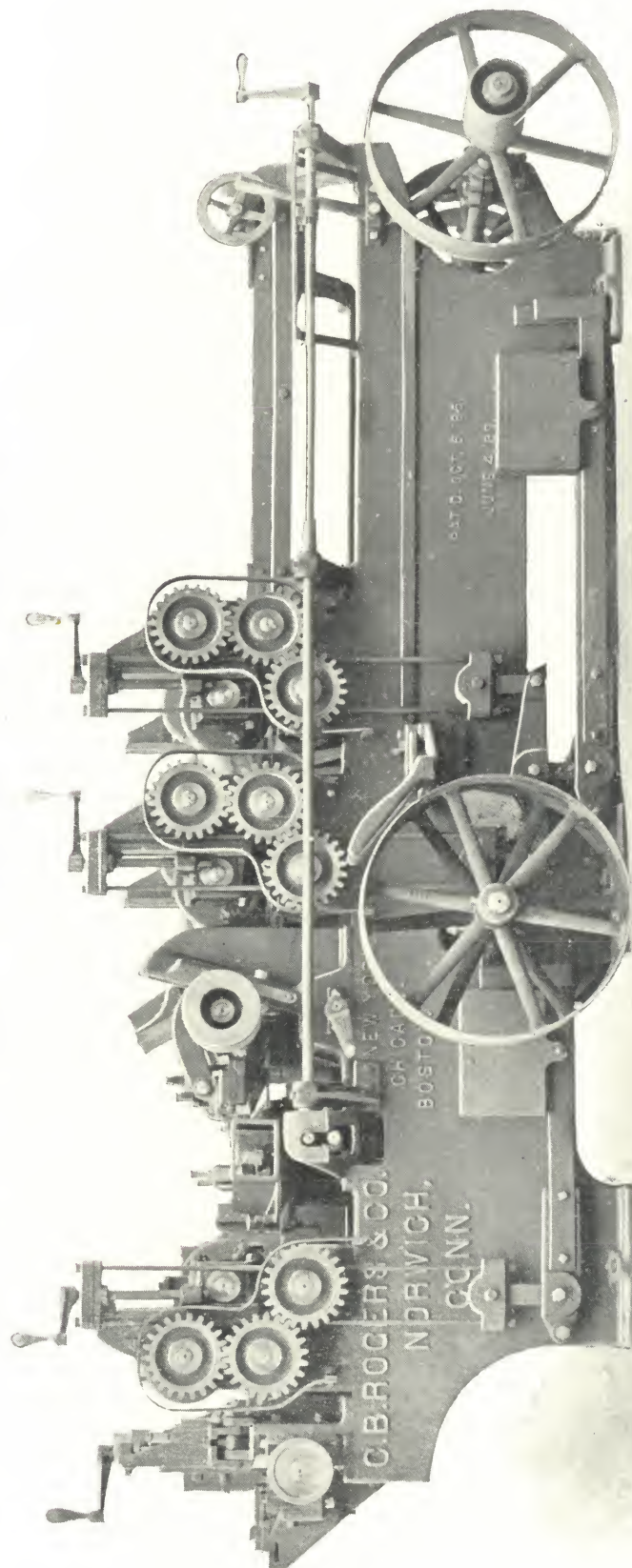
	SIZE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 167	—No. 1, Cylinder on End, 15 x 6	16 x 8	900	12,000	Horde.
Fig. 167 A—No. 1,	“ “ “ 10 x 6	16 x 8	900	11,500	Horizon.
Fig. 167 B—No. 1,	“ “ “ 9 x 6	16 x 8	900	11,200	Hornbug.
Fig. 168	—No. 3, Roll on End, 15 x 6	16 x 8	900	12,000	Hornet.
Fig. 168 A—No. 3,	“ “ “ 10 x 6	16 x 8	900	11,500	Hornless.
Fig. 168 B—No. 3,	“ “ “ 9 x 6	16 x 8	900	11,200	Horrific.

See Opposite Page for Description.

Figs. 169 and 170.

C. B. ROGERS & CO.'S

Nos. 5 and 6, Planers and Matchers.



Built in Three Sizes: No. 5, 24 x 6 and 15 x 6, Six Rolls; No. 6, 24 x 6, Five Rolls.

AMERICAN WOOD-WORKING MACHINE CO.

Figs. 169 and 170.

C. B. ROGERS & CO.'S

Nos. 5 and 6, Planers and Matchers.

THE FRAMES of these machines are all low and below the lowest level of the rolls and cylinders, making all working parts of the machine very easily accessible and permitting completion of each section of the machine independent of the rest, insuring perfect construction and alignment. Frames are heavy and well ribbed, making an excellent support for cylinder bed plates, roll posts, etc. The top cylinder bed plate and support for the cylinder is very heavy and substantial; boxes carrying the cylinder are 10½ inches long, yoked together across the machine, and sustain the pressure bar and bonnet chip-breaker, both of which are adjustable to and from the cut to variation of projection. Lower cylinder boxes are same as the upper, and connected in yoke form attached to angle plates, which in turn are attached to the frame. Adjustment of the cylinder is obtained through adjusting screws with check nuts. Cylinder can be raised or lowered at both ends, or either end, independent of the other. Pressure bar arranged to swing up from either side, and the bars are both adjustable, and can be completely removed when desired, to allow of easy access to lower cylinder.

The Side Spindles are large, run in heavy yoked babbitted boxes, with special device for supporting and lubricating the lower end of the spindle. These yokes are supported on heavy flat cross bars and have very large bearing at upper end, adjusted by means of screw and nut. The nut being removable, so that when worn to show back lash, it can be readily replaced. The yoke is held in position on the bar by means of two loose gibs, and can be clamped in position by means of large hand wheel at the back. Side head has weighted chip-breaker swinging in circle with the cut.

The Feed on this machine is exceptionally strong and so arranged that cramping of the roll gears or boxes is impossible. We use a very heavy train of gears, and our patented device for connecting the upper roll, which does away with all of the short studs and links used in the old style expansion. The only link in this device is the one connecting the top and first roll shaft boxes, this gear shaft box being the only one that is not fast in the frame. This is held in planed ways, and has a movement of about 1¼ inches. The rolls are raised, lowered and weighted on one side only, weights being outside of the frame and easily operated, leaving the inside of the frame entirely unobstructed. The feed is stopped and started by means of tight and loose pulleys and shifter. A large range of feed provided for.

These are regular four-head general jobbing planers, built in three sizes as shown below, with feed rolls on the end or cylinder on the end as may be desired. No. 5 is six-roll machine and No. 6 four-roll.

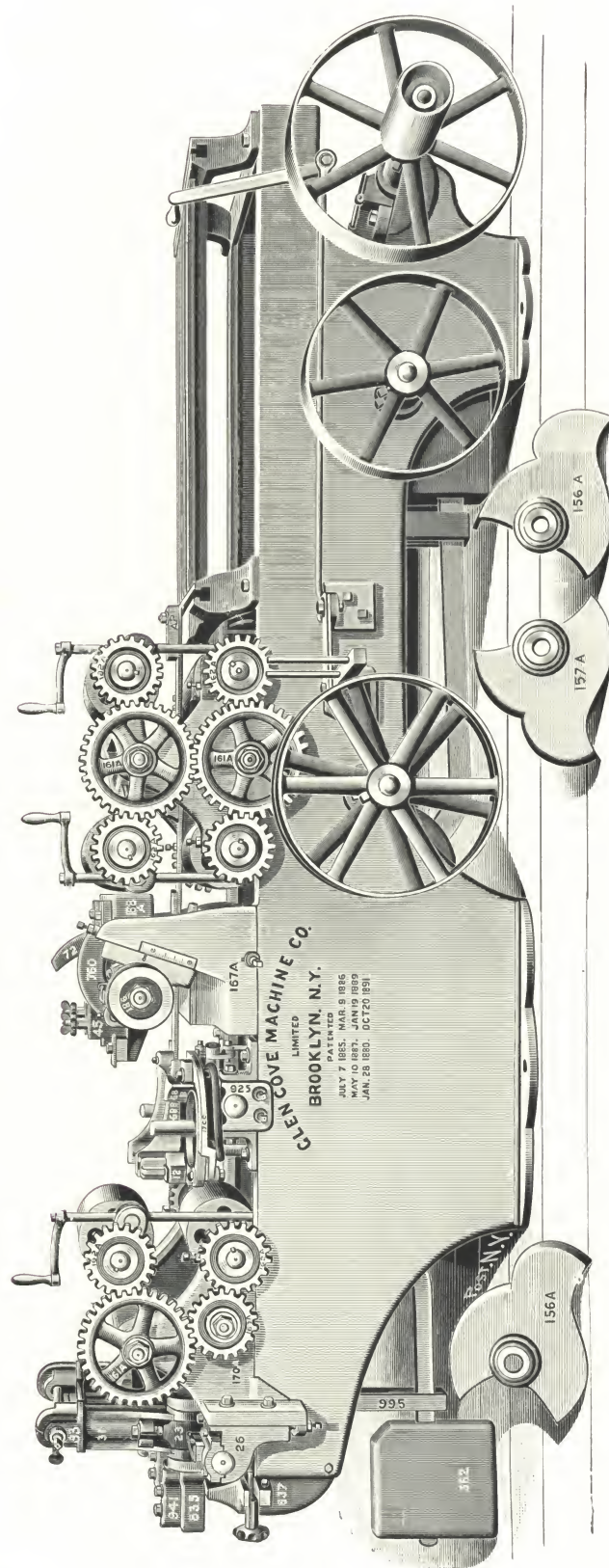
	SIZE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 169	—No. 5, Six Roll, 24 x 6.....	14 x 8	1,000	7,200	Hosier.
Fig. 169 A	—No. 5, Six Roll, 15 x 6.....	14 x 8	1,000	6,800	Hospice.
Fig. 170	—No. 6, Four Roll, 24 x 6.....	14 x 8	1,000	7,000	Hostage.

See Opposite Page for Description.

Fig. 171.

GLEN COVE MACHINE CO.'S

No. 5, Fast Feed Planer and Matcher.



24 inches wide; 6 inches hoist; Six Feed Rolls.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 171.

GLEN COVE MACHINE CO.'S

No. 5, Fast Feed Planer and Matcher.

THE above cut illustrates our No. 5 Planing and Matching Machine. It weighs 8,900 pounds, and works lumber from $\frac{1}{4}$ inch to 6 inches thick, and from 2 inches to 24 inches wide on all four sides at one operation.

It has all of our latest improvements, which consist in part of the following:

Weighted Chipbreaker to side head.

Opening End of Machine to get at under cutter-head.

Parallel Hoist to Feed Rolls.

Presser Shoes that hold edge of board down on Matcher Plate.

Gripping Device to hold the matcher leg firmly in place when set.

Means by which Matcher Plate can be adjusted.

By our simple and effective **Patent Parallel Hoisting Device**, each roll is raised by a single screw, dispensing with the usual arrangement of beveled gears and shafts. The rolls are made to bear squarely across the face of the lumber, whether it be wide or narrow, giving them great traction power, and insuring perfectly straight running.

The Cutter-Head Boxes, both top and bottom, are yoked together, which prevents them getting out of line and cramping the journals. The yoke and top cylinder, with its boxes, chipbreaker, presser bar, etc., may be removed without in any way disturbing the bed or any other part of the machine. The platen plate under the cut of the top cutter-head is secured to the cutter-head bed by bolts from underneath the bed. Should the platen wear after long and hard running, it may be removed by loosening these bolts, planed up at a machine shop, and replaced. By this device it is always easy to keep your bed plate level.

The Top Cutter-Head is either raised or lowered $\frac{1}{8}$ of an inch by each turn of the crank. The side heads are moved to or from the work $\frac{1}{4}$ of an inch by each turn of the crank. These exact measurements save time and trouble in setting up. The matcher plate should be kept level with the platen plate under the top head. In order that this can be done accurately and easily, that matcher bar is fastened in pockets, and these pockets are secured to the side of the frame by bolts, by loosening which the pocket bar and matcher leg can be raised up by means of one screw, until the matcher plate is level with the platen plate under the top cutter-head. This is a great improvement over the usual way of blocking them up with paper or tin.

The Cutter-Heads are forged solid from hard steel. The journals are drawn out from the body of the head, and are integral with it. This makes the best cutter head in the world.

The Cutter-Head Pulleys are large in diameter, giving great traction power to the belts. They are carefully fitted by a true taper and held there by a nut, which method avoids all chance of straining the spindle or throwing the head out of balance.

All the shafting is of steel. Every part or piece of the machine has a number or letter cast or stamped upon it, so that by simply giving the number or letter, duplicates may be readily ordered by wire or mail.

All Shafts and fittings, including bolts, screws and nuts, are finished to United States standard sizes.

We furnish with this machine four knives on top cutter-head, and 28 cutter-head bolts to fasten them. Two knives on bottom cutter-head and fourteen bolts to fasten them on. Four 6-inch jointer knives and 8 bolts to fasten them on. Six 2-inch jointer knives, six 1-inch and six $1\frac{1}{4}$ -inch solid milled steel matcher bits. One pair of annealed steel mortised matcher heads, and one pair of steel jointer heads, slotted on all four sides. These jointer heads have our patent method of fastening to the side spindle, doing away with the old set screw.

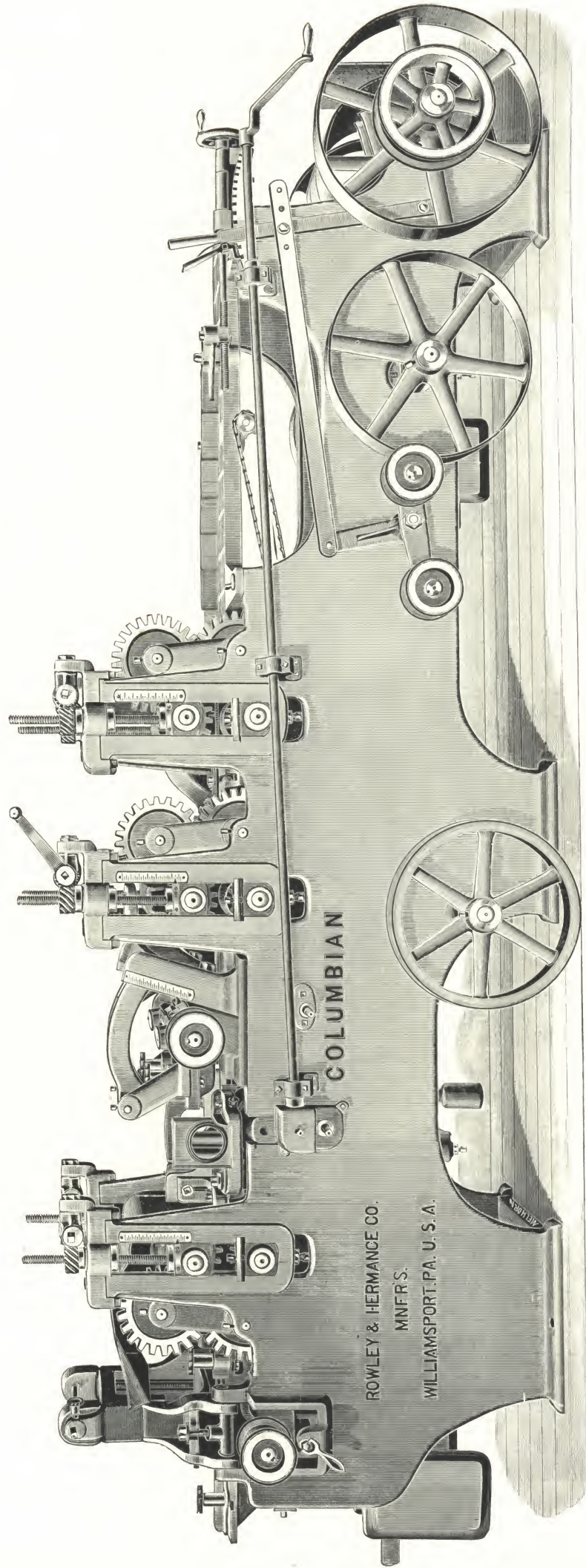
SIZE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 171—24 x 6, Six Rolls.....	14 x 8	875	8,900	Hotly.

See Opposite Page for Description.

Fig. 172.

ROWLEY & HERMANCO CO.'S

"Columbian" Six-Roll Rapid Feed Double Surfacers and Matcher.



With Sectional In-Feeding Rolls and Chip-Breakers.

Built in Three Sizes.

Also as an Eight-Roll Machine When Desired.

SIZE.	Tight and Loose Pulleys.		Revs. per Minute.	Cubic Measurement.	Approximate Weight.	Average H. P. Required.	Code Word.
	In-Feeding Rolls.	with Sectional In-Feeding Rolls.					
Fig. 172 —26-inch Double Surfacers and Matcher,	"	"	750	304	9,800	10 to 15	Hound.
Fig. 172 A—26-inch Single	"	"	750	304	9,100	8 to 12	Housage.
Fig. 172 B—24-inch Double	"	"	750	293	9,000	10 to 15	Icicle.
Fig. 172 C—24-inch Single	"	"	750	293	8,600	8 to 12	Ideal.
Fig. 172 D—14-inch Double	"	without	750	243	8,300	8 to 12	Idiom.
Fig. 172 E—14-inch Single	"	"	750	243	8,000	6 to 10	Idler.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 172.

ROWLEY & HERMANCO CO.'S

"Columbian"

Six-Roll Rapid Feed Double Surfacers and Matcher.

With Sectional In-Feeding Rolls and Chip-Breakers.

THE cut illustrated on the opposite page represents our Improved New "COLUMBIAN" Extra Heavy Six-Roll Double Planer and Matcher, designed for surfacing and matching, where speed, strength and first-class work in large quantity are required; which, with the following description, should give the reader a very clear knowledge of the machine.

The Frame is substantial and strong, has six legs distributed in the best proportion to give strength and rigidly support the working parts, thus avoiding all trembling and vibration, and producing uniformly smooth work under all conditions.

The Matcher Headstocks are mounted on turned bars of large diameter, and arranged to take up all wear. They may be moved laterally in opposite directions to each side of the frame, so as to admit of surfacing the full width of the machine without dropping the headstocks or removing the heads.

The Matcher Head Spindles are steel, of large diameter, and may be raised or lowered at the will of the operator, the lower end running on anti-friction steps, provided with large oil chambers, which can be kept filled with oil, thus providing standing oil for the spindles to run in and making it scarcely possible for them to heat.

The Matcher Heads, which are the Shimer Patent, are fitted with adjustable chip-breakers and pressure shoes to hold the lumber in its proper place, and the piece being worked is forced against the long guide by means of the steel spring, adjustable by a hand-wheel convenient to the operator. These heads are also provided with hoods for fan connection, for carrying away the shavings.

One or both heads may be moved at the same time, in the same direction, either from the side or the in-feeding end of the machine; thus, in running flooring, etc., when the knives on the top cylinder head become dull at one place, the side heads may be moved to a new place by simply turning one screw, which maintains the same relation between them, and the operation can be repeated. The long guide on the right, or grooved side of the machine, moves its entire length with the heads and needs no attention when adjusting for different widths of lumber.

Both the upper and under cylinder are $6\frac{1}{2}$ inches in diameter, slotted on four sides, made of solid steel forgings, with the journals drawn from the body of the forging, and belted at both ends. The boxes carrying the top head, which are long and lined with genuine babbitt metal, are connected by a yoke running underneath the table, which admits of much more space about the head than the usual construction. The pressure bar and sectional chip-breaker are both adjustable to and from the knives, and can be set to suit plain knives or any kind of moulding knives, and be adjusted in one minute.

The Under Cylinder Head is mounted in a heavy, rigid headstock, and raises and lowers for variation of cut by means of inclined planes from front or working side of the machine, which always keeps the head in line with the table. Either end of the head can be raised or lowered, however, by turning one bolt. The headstock is firmly secured by two screws, both easy of access. The table in front of the under head acts as a chip-breaker, and is adjustable to and from the head. The delivery table can be swung downward and pressure bar over the knives swung upward from either end, thus leaving the knives perfectly free.

It has Six Feed Rolls, $6\frac{1}{2}$ inches in diameter, all driven by the best and strongest system of gearing known. Upper and lower rolls are connected at both ends by heavy expansion gears, all loose expansion gears being bushed with brass, making a durable and powerful feed. It is also supplied with a broken roll for running lumber of uneven thickness.

This machine is constructed as simple as is consistent with good results, all complicated devices which are liable to get out of order and give trouble being avoided. It will plane and match up to 24 inches wide, and from $\frac{1}{8}$ of an inch to 6 inches thick. Both counter-shafts are mounted in swivel boxes, which always align themselves to the shafts.

There are three rates of feed: 50, 75 and 100 lineal feet per minute.

We furnish with each machine four plain knives for the top cylinder, two plain knives for the bottom cylinder, one set (2) Shimer Patent matcher heads with one set of matcher cutters, one set (2) four-slotted jointing heads 6 inches long, with one set (4) jointing knives, two sets (4) beading bits and four wrenches.

We build this as an Eight-Roll Machine when desired.

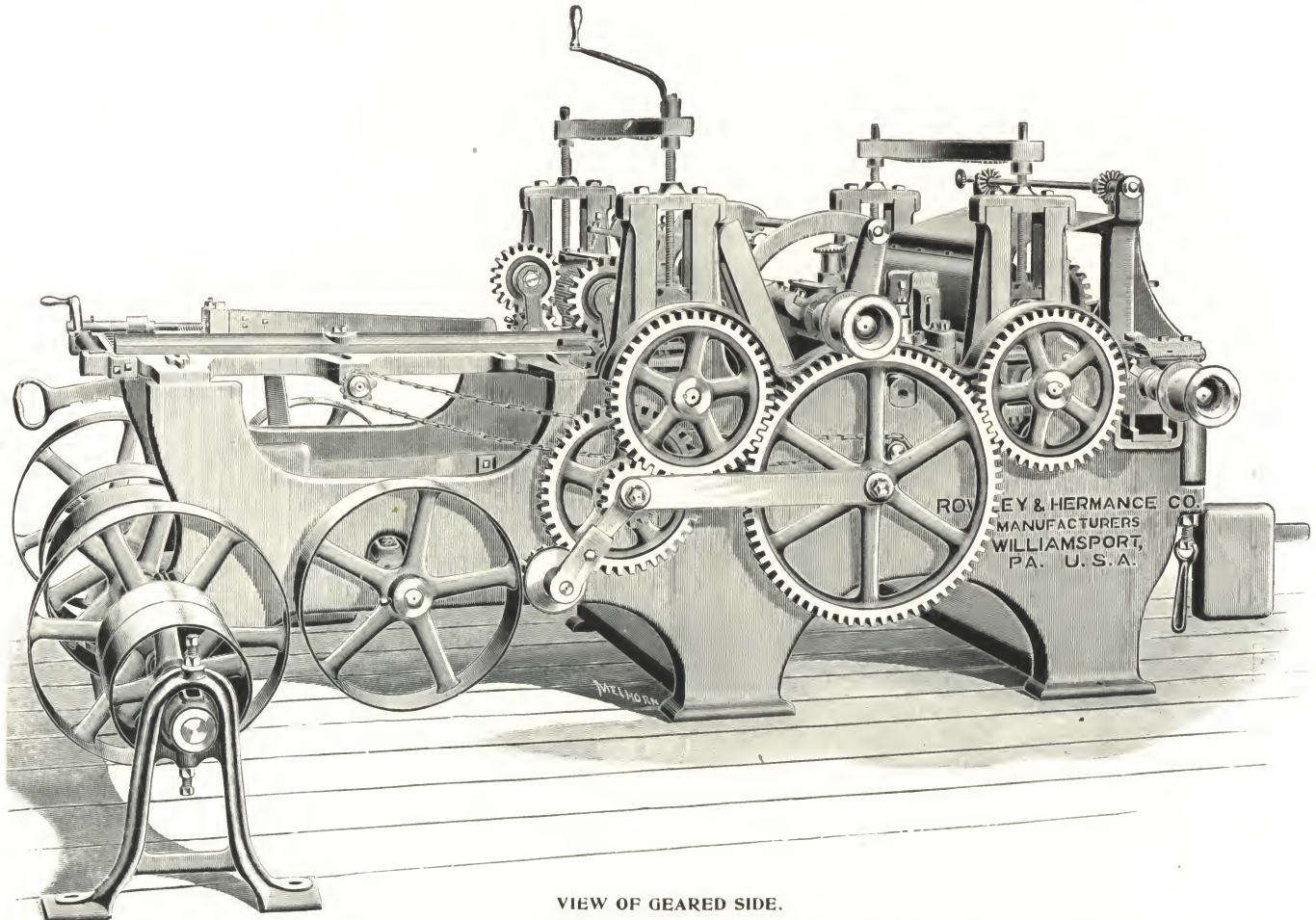
AMERICAN WOOD-WORKING MACHINE CO.

See Opposite Page for Description.

Fig. 173.

ROWLEY & HERMANCE CO.'S

"Portland" Four-Roll Double Surfacers and Matcher.



VIEW OF GEARED SIDE.

THE accompanying views show the opposite sides of our New "Portland" Four-Roll Double Surfacers and Matcher, which is a heavy, strong and compact machine, adapted for general planing mill use, and of sufficient capacity for all ordinary work up to 6½ inches thick.

It has a well proportioned frame with six legs so distributed as to give the greatest strength to support the working parts rigidly, thus avoiding trembling and vibration, and producing uniformly smooth work under all conditions.

The Top and Bottom Cylinders are 5½ inches diameter of cutting circle, made of solid steel forgings, slotted on four sides, with long journals drawn from the body of the forgings, and belted at BOTH ENDS.

The Knife Bolts are steel, with steel washers and case-hardened nuts.

The Matcher Headstocks are mounted on large turned bars, and are arranged to take up all wear. They can be moved laterally in opposite directions across the machine to admit of surfacing the full length of the knives without dropping the headstocks or removing the heads.

The Matcher Head Spindles are steel, of large diameter, and supplied with large oil chambers by which a supply of oil can be provided for the spindles to run in, making it scarcely possible for them to heat.

The Matcher Headstocks are fitted with adjustable chip-breakers to hold the lumber in its proper position, and are adjustable up to 24 inches wide. One or both heads can be moved at the same time in the same direction by the crank at the side of the machine. The long guide is attached to the headstock and moves with it. By this means, when working narrow lumber and the knives become dull in one place, the matcher heads and guide can be moved over, thus wearing the knives and bed of the machine evenly.

The Pressure Bars and Chip-Breakers are adjustable to and from the knives, and can be set to suit plain or any kind of moulding knives. The chip-breaker raises with the front roll to allow for variation in thickness of lumber, and is adjustable.

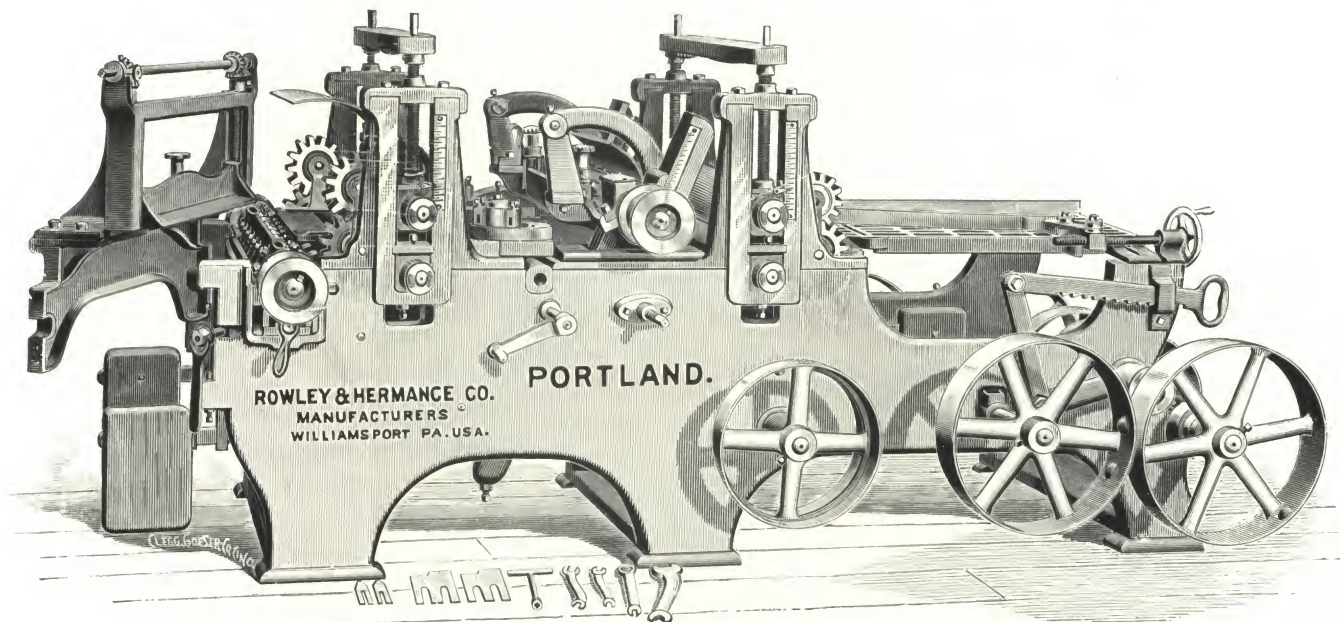
The Top Head and Rolls raise and lower 6½ inches, the bed remaining stationary.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 173.

ROWLEY & HERMANCO CO.'S

"Portland" Four-Roll Double Surfacar and Matcher.



VIEW OF FRONT SIDE.

The Under Cylinder Head is mounted in a heavy, rigid headstock, and is adjustable for variation of cut by means of inclined planes from the front or working side of the machine, which always keeps the head in line with the table. Either end of the head can be raised or lowered, however, by turning one bolt. The headstock is firmly secured by two screws, both easy of access. The table in front of the under head acts as a chip-breaker, and is adjustable to and from the head. By simply turning one bolt to which is attached a swivel wrench, the delivery table and pressure bar over the knives can be swung outward, thus leaving the knives perfectly free.

It has four 5½ inch **DRIVEN** feed rolls, connected by strong expansion gears, all loose expansion gears being bushed with brass, making a durable and powerful feed. All connecting links are secured to the bearings by nuts, so that any lost motion through wear can be quickly taken up. The *feed rolls* are *weighted* and the *weights* are *adjustable for light or heavy work*.

The feed works are started or stopped by a belt tightener placed convenient to the operator.

It can be changed to a surfacer very quickly by simply running the matcher heads to the opposite sides of the machine.

The gears are made from **CUT IRON PATTERNS**, making them perfectly true.

All Belts pull on the bottom of the boxes instead of against the sides.

The machine is constructed as simply as is consistent with good results, all complicated devices liable to get out of order or give trouble being avoided.

It will plane 24 inches wide, and from ¼ of an inch to 6½ inches thick, and match from 2½ inches to 24 inches wide.

It has two rates of feed: 37 and 55 lineal feet per minute.

We furnish with each machine two plain knives for the top cylinder, two plain knives for the bottom cylinder, one set (2) Shimer patent matcher heads, with one set flooring cutters, one set (2) slotted jointing heads, with one set (4) jointing knives, one set (2) beading bits, one set (2) novelty siding knives, and five wrenches.

We build this machine either as a Single or Double Surfacar and Matcher, or Surfacar only.

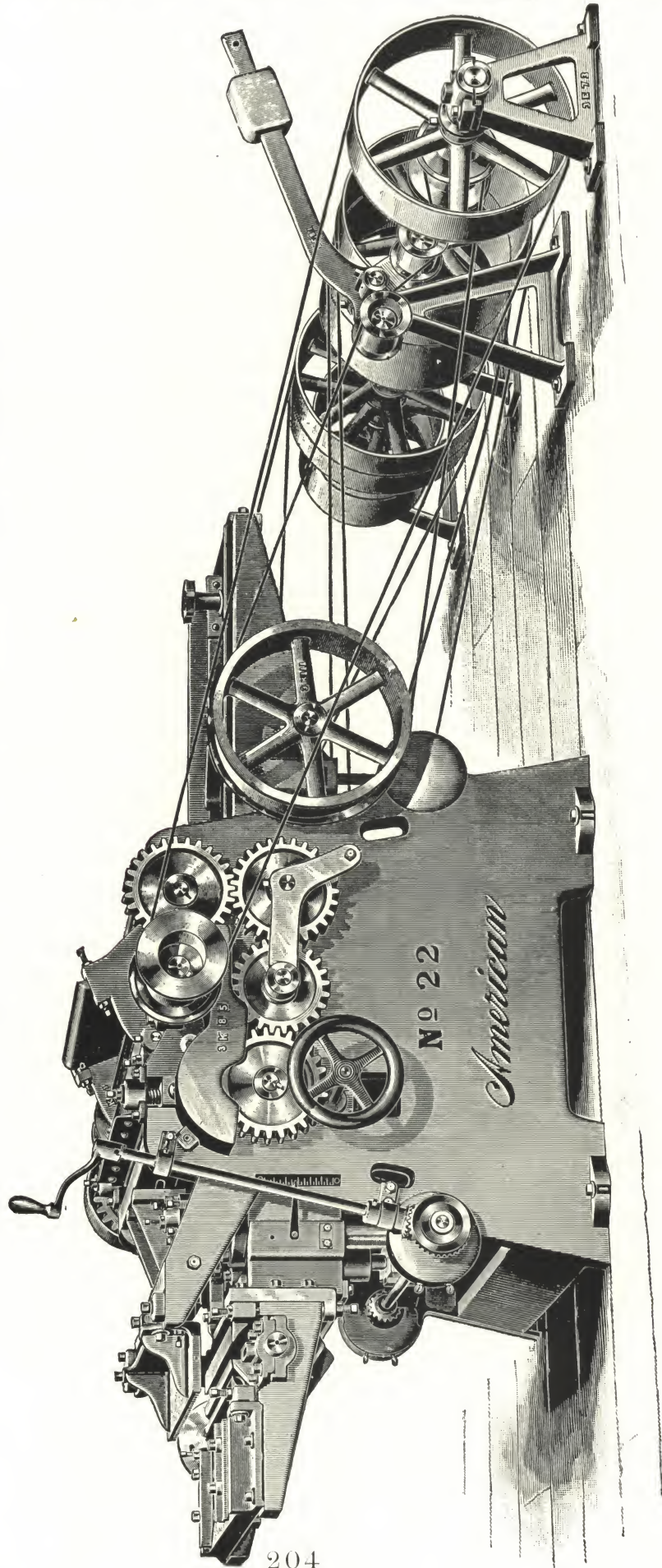
SIZE.	Tight and Loose Pulleys.	Revs. per Minute.	Cubic Measurement.	Approximate Weight.	Average H. P. Required.	Code Word.
Fig. 173 —24-inch Double Surfacar and Matcher.....	12 x 8	900	221	5,600	4 to 8	Idolize.
Fig. 173 A—24-inch Single " "	12 x 8	900	.....	.....	3 to 7	Idylle.
Fig. 173 B—24-inch Double Surfacar only.....	12 x 8	900	.....	.....	3 to 7	Ignite.
Fig. 173 C—24-inch Single " "	12 x 8	900	.....	.....	3 to 6	Ignobly.

See Opposite Page for Description.

Fig. 174.

HOYT & BROTHER CO.'S

No. 22, Single or Double Planer and Matcher.



We build this machine 30 x 6 and 24 x 6, either as a Double or Single Planer and Matcher, with either Sectional or Straight Rolls.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 174.

HOYT & BROTHER CO.'S

No. 22, Single or Double Planer and Matcher.

ON opposite page we illustrate our New Combination Surfacer and Planer and Matcher. This machine is entirely new in design, and is in all ways at the head in its class. It will surface 24 and 30 inches wide, and $\frac{3}{8}$ to 6 inches thick, and dress and match from $2\frac{1}{2}$ to 12 inches wide, usual thickness.

The Table is supported on four screws, all operated at the same time and with one motion. It has four rolls, 5 inches in diameter, strongly geared together. The first top roll is fluted. It is a strong and powerful feeder.

The Cylinders are made of steel and carry two knives each. The top cylinder is slotted on the sides not carrying the knives, allowing miscellaneous knives to be used for odd work, such as beading, drop siding, and a limited range of mouldings. It is double belted. The spindles are $2\frac{1}{4}$ inches on upper and 2 inches on lower heads, with long bearings.

The Matcher Stocks are supported on a heavy screw, reaching across the machine, and the left hand side head, as you stand to feed, is adjusted on this screw. These matcher stocks are held to place, or upright, by two caps and bolts. When used as a surfacer the bolts are loosened; the caps turn around, which allows the heads to swing down below the line of cut. Spindles for the side heads are of large diameter, and are $1\frac{5}{8}$ inches above the matcher stocks. The bottom end of spindles are supported on bronze steps, and run constantly in stationary cups of oil.

The Chip-Breaker and pressure bar beside the top cylinder are adjusted to and from the line of cut, allowing the use of long knives for odd work. The chip-breaker has a support on the boxes that carry the first top feed roll, and is held in line $\frac{1}{4}$ -inch below the bottom line of the roll. This eases the entrance of the lumber, and makes it impossible to stick or stall the machine.

The Under Cylinder is placed outside the second pair of rolls, or at the rear end of the machine. When access is wanted to it, there are two nuts to loosen, swing the caps away, turn back the bed over the cylinder, take out one or both of the pressure bars, and it is entirely exposed.

We send with each machine the knives on the cylinders, one pair beader bits, and six bolts and nuts for each head; one pair three-wing side heads, with one set each 1-inch matcher and 2-inch jointer bits, and all necessary wrenches.

This matcher is built both as a single and double cylinder, 24 or 30-inch machine. It has three changes of feed, namely: 30, 40 and 50 lineal feet per minute.

These machines are also built with sectional rolls and chip-breakers if so desired.

BELTING REQUIRED.

Two for Top Cylinder, each 17 feet 9 inches, 5 inches wide.

One for Bottom Cylinder, 22 feet 2 inches, 4 inches wide.

Two for Side Heads, each 19 feet 7 inches, $3\frac{1}{2}$ inches wide.

One for Feed, 13 feet 1 inch, 4 inches wide.

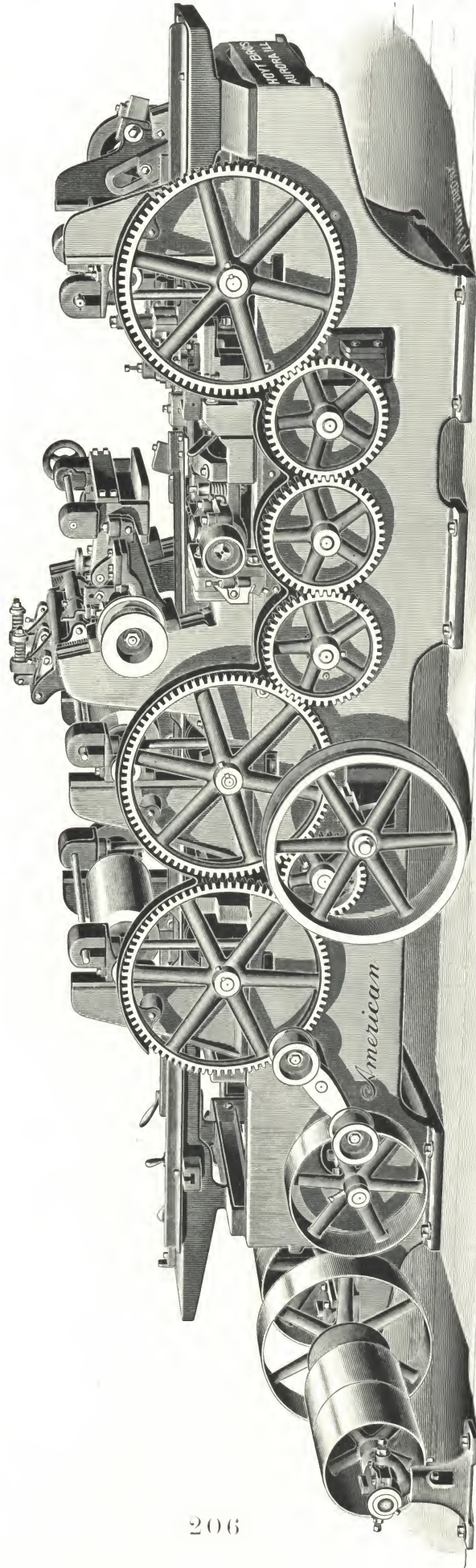
SIZE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 174 —30 x 6, Double, Sectional Rolls.....	14 x 7	1,000	5,200	Ignore.
Fig. 174 A—30 x 6, Single, " ".....	14 x 7	1,000	4,700	Illness.
Fig. 174 B—30 x 6, Double, Straight Rolls.....	14 x 7	1,000	5,100	Illuded.
Fig. 174 C—30 x 6, Single, " ".....	14 x 7	1,000	4,600	Illusion.
Fig. 174 D—24 x 6, Double, Sectional Rolls.....	14 x 7	1,000	4,600	Imbibe.
Fig. 174 E—24 x 6, Single, " ".....	14 x 7	1,000	4,200	Imitator.
Fig. 174 F—24 x 6, Double, Straight Rolls.....	14 x 7	1,000	4,500	Immerge.
Fig. 174 G—24 x 6, Single, " ".....	14 x 7	1,000	4,100	Immit.

See Opposite Page for Description.

Figs. 175, 176 and 177.

HOYT & BROTHER CO.'S

Nos. 26, 27 and 28, Planers and Matchers.



This machine is built in Three Sizes: No. 28 works 21 x 8; No. 27 works 15 x 8; No. 26 works 9 x 8.

AMERICAN WOOD-WORKING MACHINE CO.

Figs. 175, 176 and 177.

HOYT & BROTHER CO.'S

Nos. 26, 27 and 28 Planers and Matchers.

THE engraving on the opposite page represents a new design of planers and matchers. They are especially adapted to hard wood flooring, and are equally efficient in dressing soft woods.

The No. 26 will plane and match from 1½ to 9 inches wide, the No. 27 up to 15 inches wide, and the No. 28 up to 21 inches wide. Each machine will dress from ¾-inch to 8 inches thick. The No. 28 machine is provided with sectional rolls and chip-breakers and has center guide.

The Gears are large and strong, with broad face, and all parts coming in contact with the timber are faced and pointed with tool steel, for longer wear and finer adjustment, and may be replaced at little cost.

The Feed consists of six 9½-inch rolls, the upper ones having a parallel lift and an improved expanding gear.

The Upper and Lower Cylinders are slotted on all four sides, have 2½-inch journals and are exactly alike and interchangeable. They are provided with an improved arrangement for preventing end play.

The Upper Cylinder Pressure consists of a parallel lifting pony roll and a tool steel-faced and pointed chip-breaker, which always retains its level position on the lumber; also a pressure bar behind, which is adjusted without the use of a wrench. There are no arms over the upper head, and all the pressure devices may be moved away from the head to do deep cutting.

The Lower Cylinder Bars are adjustable for deep cutting, the first one having a tool steel point which may be placed so as to just clear the knives. The rear bars having spring pressure, for the purpose of holding up against the bed lumber with thin or hollow spots.

The Lower Cylinder may be drawn out at one side for the purpose of sharpening or setting for the easier alignment of projecting knives.

The Side Head Chip-Breaker is adjustable. The tool steel point to the long guide, as well as the blocks behind the side-heads, are also adjustable.

Both Upper and Lower Cylinder Boxes are yoked.

The Hold-Down arrangement is perfect. Both side-heads are rigidly locked, when in position, by a lever. The side-head yokes have tool steel bearing pieces.

The Side-Head Spindles are 2 inches in diameter, and 1½ inches where the head fits on. It is advisable to dress face down as it permits the removal of the surplus with the top head and leaves a limited graduated out to be removed with the lower head. This allows the pressure bar to be set much closer than any lifting upper chip-breaker can be, and permits the same grade of work at much greater speed.

Both Cylinders are placed before the side-heads, and by passing the lumber over a long steel plate to the under cylinder close behind, it is worked to a perfect even thickness before it passes the matcher heads, insuring a perfect match.

Every part or piece of the machine has a number cast or stamped upon it, so that by simply giving the number on the part, duplicates may be readily ordered by wire or mail.

BELTING REQUIRED.

Two belts for Upper Cylinder, 5½ inches by 22 feet 2 inches.
Two Belts for Lower Cylinder, 5½ inches by 18 feet 6 inches.
Two Belts for Side-Heads, 5 inches by 26 feet.
One Belt for Feed, 4 inches by 17 feet 8 inches.

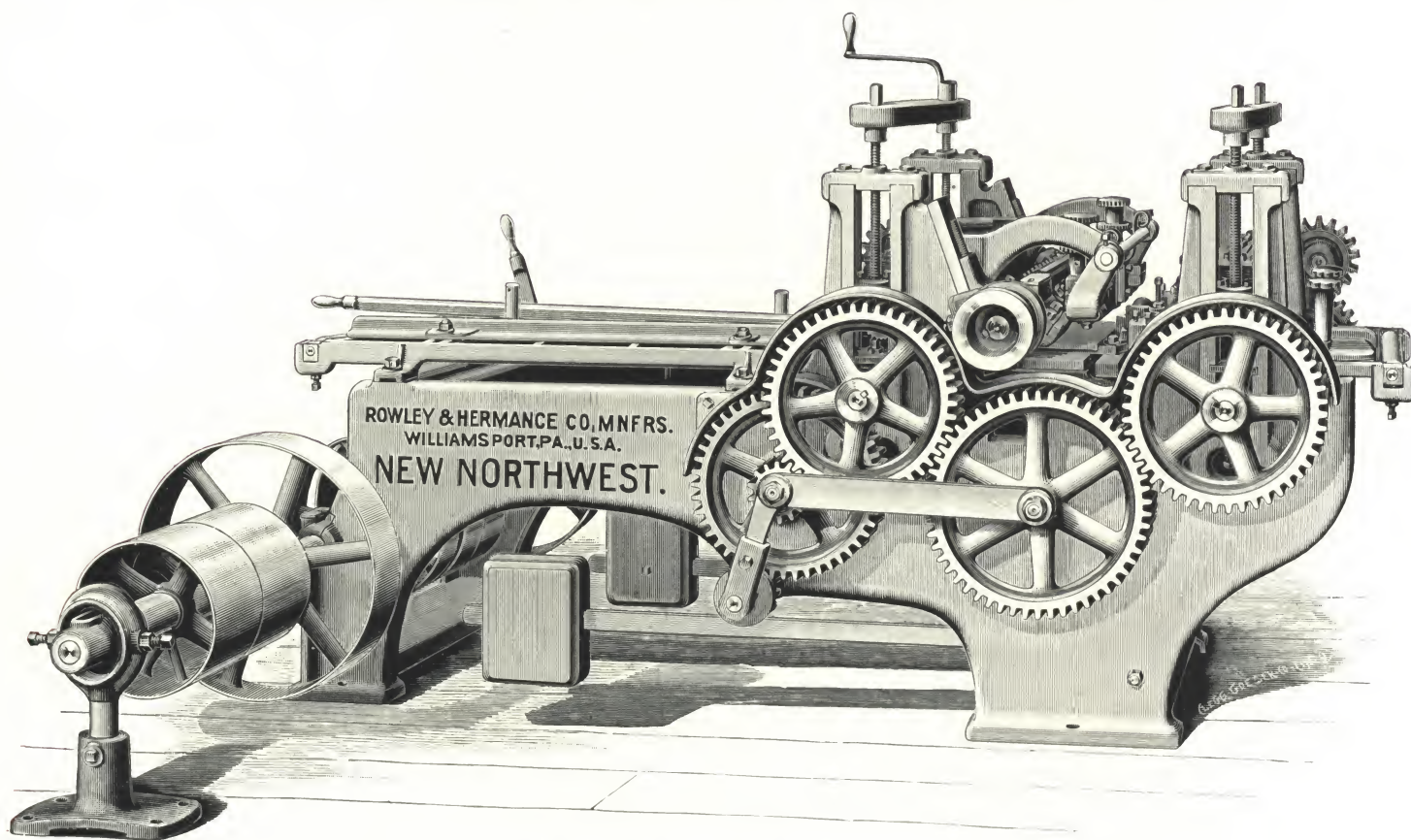
SIZE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 175—No. 28, Planer and Matcher, 21 x 8.....	14 x 8	1,000	12,500	Immure.
Fig. 176—No. 27, " " " 15 x 8.....	14 x 8	1,000	12,000	Impact.
Fig. 177—No. 26, " " " 9 x 8.....	14 x 8	1,000	11,500	Impale.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 178.

ROWLEY & HERMANCE CO.'S

"New Northwest" Four-Roll Planer and Matcher.



VIEW OF SINGLE SURFACER AND MATCHER.

THIS Machine, which we build either as a Single or Double Surfacers and Matcher, is designed to meet the demands of a large class of manufacturers of flooring, ceiling, siding, moulding, etc., who want a strong, durable and compact machine at a moderate price, which is adapted to general planing mill use and for all ordinary work up to 6 inches thick.

The Frame is cast in one piece, well proportioned, and rigidly supports the working parts.

The Top and Bottom Cylinders are 6 inches diameter of cutting circle, made of solid crucible steel forgings, slotted on four sides, with long journals drawn from the body of the forgings, and the top cylinder is belted at both ends.

The Under Cylinder is mounted in a heavy, rigid headstock, and is adjustable for variation of cut. Either end of the head can be raised or lowered. The headstock is firmly secured by two screws, both easy of access. The table in front of the under head acts as a chip-breaker and is adjustable to and from the head. By simply turning one bolt, to which is attached a swivel wrench, the delivery table and pressure bar over the knives can be swung outward, thus leaving the knives perfectly free.

The Pressure Bar and Chip Breaker are adjustable to and from the top cylinder, and can be set to suit plain knives or projections of moulding knives. The chip-breaker rises with the front roll to allow for variation in thickness of lumber.

The knife bolts are steel, with steel washers and case hardened nuts.

The Matcher Head Spindles are steel, of large diameter, and the headstocks in which they run are supplied with suitable oil chambers.

Adjustable chip-breakers are provided for the matcher headstocks for holding the lumber in its proper position.

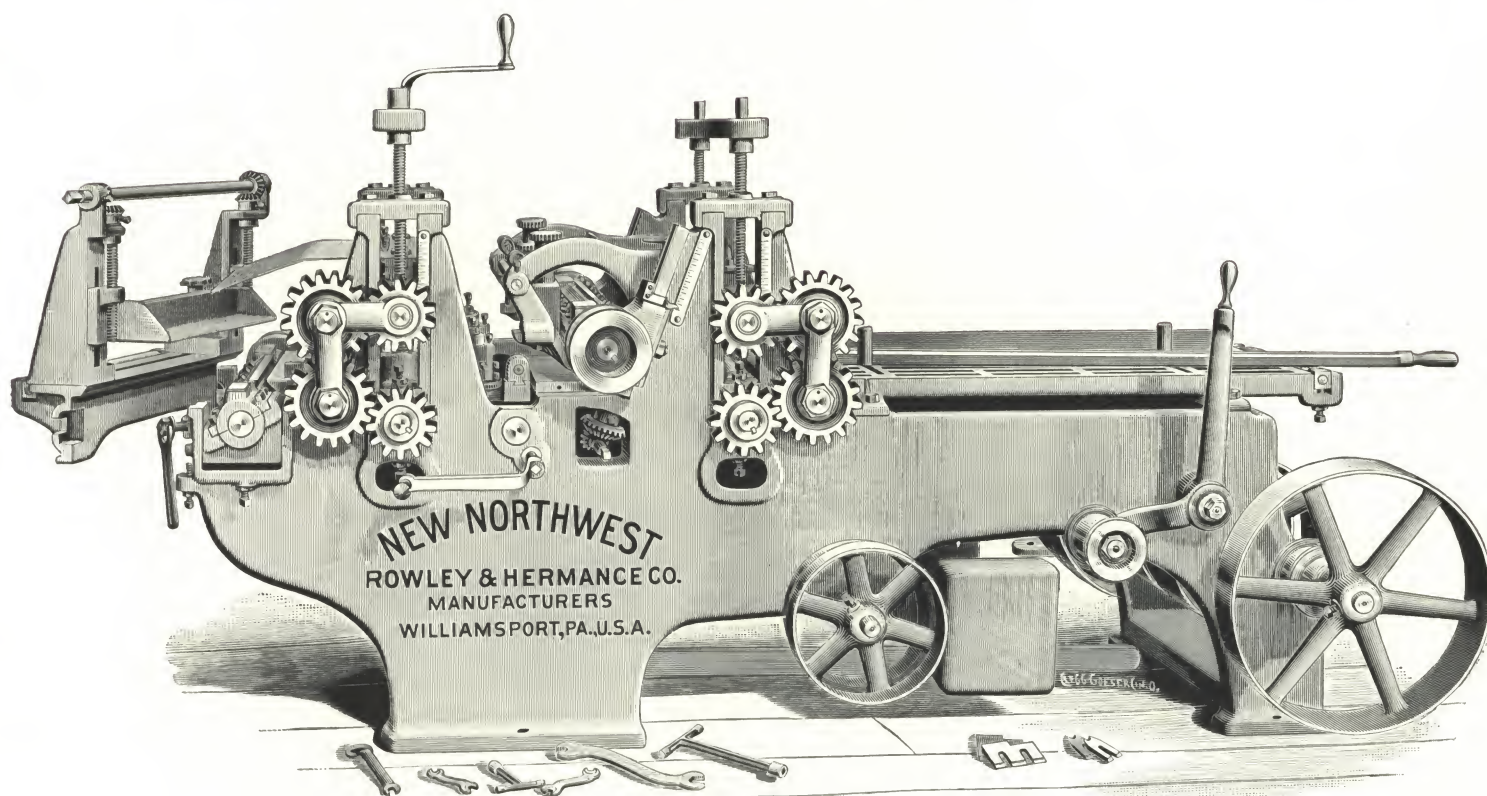
It has four 6-inch driven feed rolls, connected by strong expansion gears, all loose expansion gears being bushed with brass, making a durable and powerful feed. All connecting links are secured to the bearings by nuts, so that any lost motion through wear can be quickly taken up. The feed rolls are weighted and the weights are adjustable for light or heavy work.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 178 A.

ROWLEY & HERMANCÉ CO.'S

"New Northwest" Four-Roll Planer and Matcher.



VIEW OF DOUBLE SURFACER AND MATCHER.

The feed works are started and stopped with a belt tightener placed convenient to the operator.

The expansion links are made of wrought iron.

Outside supports or braces are attached to the right-hand side of the machine to support the intermediate gears.

All bearings are of large diameter.

The Gears are extra heavy and durable, made from cut iron patterns, making them perfectly true.

All belts pull on the bottom of the boxes instead of against the sides.

It can be changed to a surfacer very quickly by simply removing the matcher heads and running the spindles to the opposite sides of the machine.

The Machine is constructed as simply as is consistent with good results, all complicated devices liable to get out of order or give trouble being avoided.

It will plane 24 inches wide, and from $\frac{1}{4}$ -inch to 6 inches thick, and match from $2\frac{1}{2}$ inches to 20 inches wide.

It is provided with two rates of feed: 32 and 47 lineal feet per minute.

We furnish with each machine two plain knives for the top cylinder, two plain knives for the bottom cylinder, two 2-wing matcher heads with one set (four) matcher knives for the side spindles, two beading knives, two novelty siding knives and the necessary wrenches.

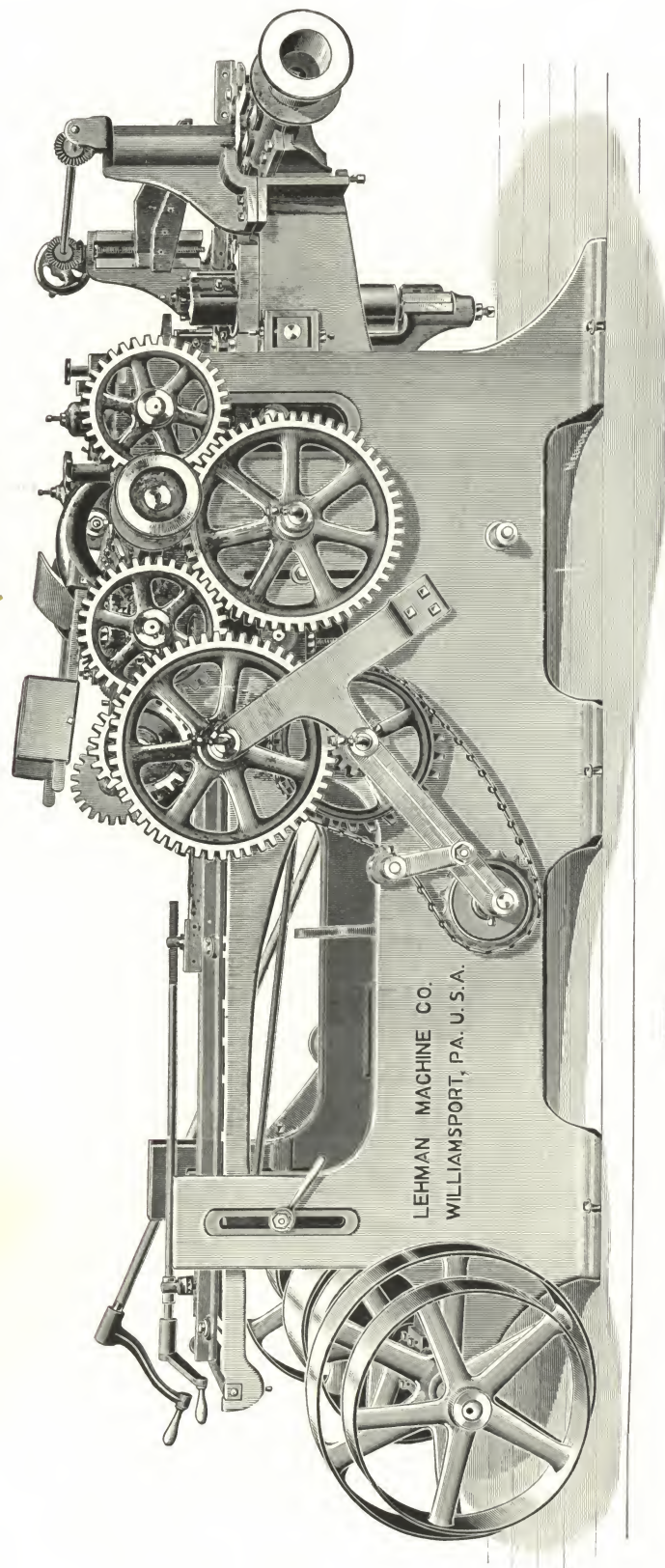
SIZE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 178 A—24-inch Double Surfacers and Matchers.....	12 x 8	900	4,700	Impasse.
Fig. 178 —24-inch Single Surfacers and Matchers.....	12 x 8	900	4,200	Impede.

See Opposite Page for Description.

Fig. 179.

LEHMAN MACHINE CO.'S

New "Union" Planer and Matcher.



The above machine is built 24 inches wide, to plane either three or four sides. We furnish either Sectional or Solid Rolls, as desired.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 179.

LEHMAN MACHINE CO.'S

New "Union" Planer and Matcher.

THE machine shown on opposite page is provided with our improved pressure bars and chip-breakers, being arranged for working flooring, novelty siding, beading, etc. The front pressure bar or chip-breaker is adjustable to and from the cylinder, to insure smooth working on either hard or soft wood, and so arranged that if forced up by a heavy cut it will not come in contact with the knives; or it may be swung clear of the cylinder for sharpening, or setting the knives for any style of work. Our improved hinged sectional pressure bars and sectional feed rolls on this machine are the most important improvements which have as yet been produced for surfacing two or more unevenly sawed boards at the same time and working all equally as well.

The Cylinders on this machine are made of the best steel forgings, with all sides slotted, running in self-oiling boxes, 11 inches long. The top cylinder is double belted; the under cylinder is adjusted with the bed of the machine for the different thicknesses of stock and runs in our improved yoke boxes, making a very rigid bearing.

The Head Stock is so arranged that you have easy access to the knives for sharpening. The side heads and matcher frames are hung on heavy steel screw, and are adjustable to work flooring any width up to 14 inches wide, and by a simple device with all attachments are swung or dropped out of the way when changing from flooring to surfacing, and is being very much appreciated, as it only requires one moment to make the change. The matcher spindles are of large diameter, and run in long self-oiling boxes and steps.

The Four Feed Rolls are 6 inches in diameter, and fitted with the most powerful gearing ever fitted to a machine of this kind. There are two rates of feed, 40 and 60 feet per minute, and can be changed instantly while the machine is in motion.

The Back or Feeding-Out Roll has a scraper and oil box, and receives its pressure from large steel springs. The machine has our improved mode of putting the rolls in the bed, doing away with loose plates in front and back of the rolls, thus making the bed 100 per cent. stronger than the old way. The bed is dovetailed to the frame and so arranged with gibs that any wear resulting from raising or lowering the bed can be taken up, which is of great importance, as it prevents the waving or chipping off of the ends of the lumber as it passes through the machine.

The Receiving End of the table has a bolt passing through the frame, with hand wheel and nut, with two heavy wrought iron truss braces, making it stronger and less vibratory, and with the weight of the bed and everything connected with it, being equally distributed from the center line of the raising screws, and making the bed rise with perfect regularity and ease.

The Studs are arranged so that they can be oiled without stopping the machine.

With each machine we furnish 24-inch straight knives for top and bottom cylinders, six steel bolts for extra knives, one pair of matcher heads, with bits for flooring, one pair of German siding knives, one pair of beading knives, right and left handed.

BELTING REQUIRED.

Two Belts for Top Cylinder, 16 feet long, 4 inches wide.

Two Belts for the Matcher Spindles, 18 feet long, 3 inches wide.

One Feed Belt, 15 feet long, 2½ inches wide.

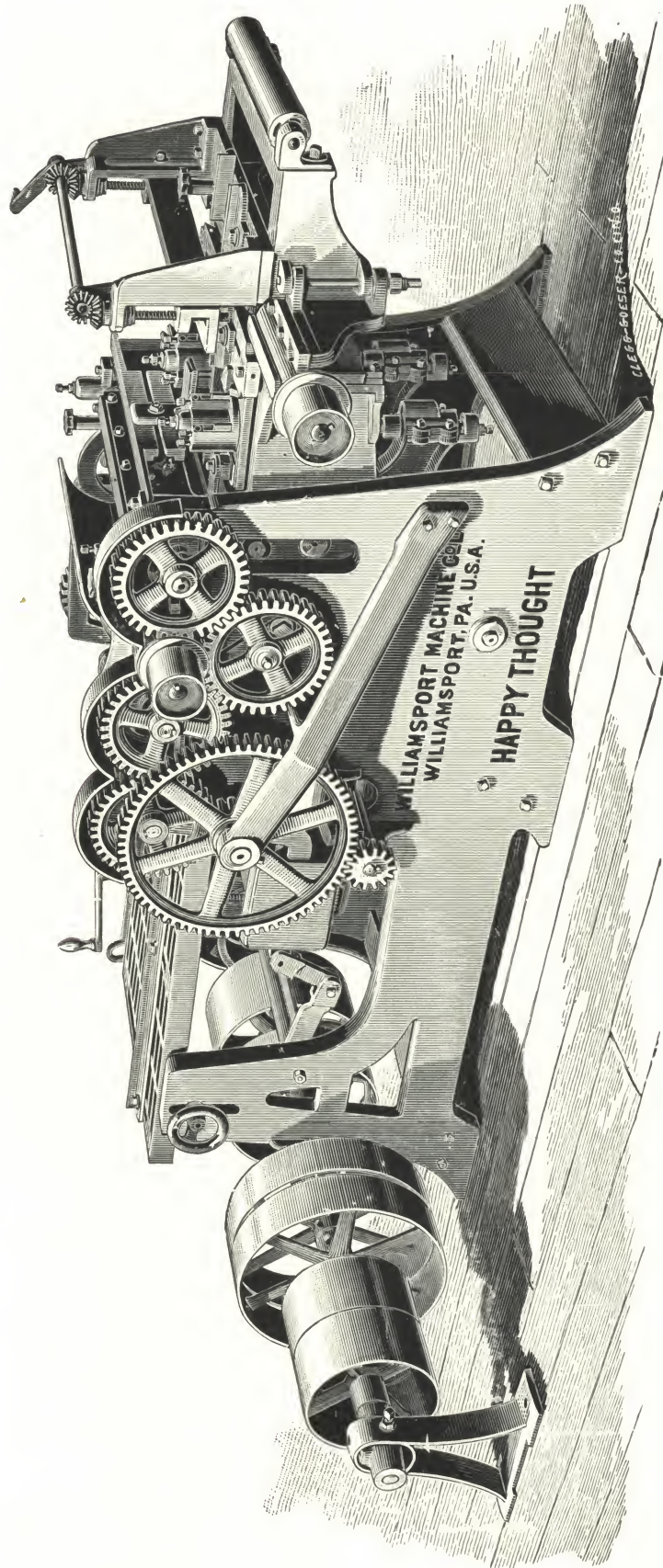
SIZE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 179 —24 inches wide, to Plane Four Sides, Sectional Roll.....	12 x 6	950	5,000	Impetus.
Fig. 179 A—24 inches wide, to Plane Three Sides, Sectional Roll.....	12 x 6	950	.....	Impiety.
Fig. 179 B—24 inches wide, to Plane Four Sides, Solid Roll	12 x 6	950	.....	Impish.
Fig. 179 C—24 inches wide, to Plane Three Sides, Solid Roll	12 x 6	950	.....	Implant.

See Opposite Page for Description.

Fig. 180.

WILLIAMSPORT MACHINE CO.'S

“Happy Thought” Planer, Matcher and Moulder.



Built either as a Single or Double Planer and Matcher. Planes 24 inches wide, 6 inches thick.
Tongue and Groove to 14 inches wide.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 180.

WILLIAMSPORT MACHINE CO.'S

"Happy Thought" Planer, Matcher and Moulder.

WE illustrate on opposite page our New Four-Side "Happy Thought" Planer, Matcher and Moulder, of new design and from new patterns. The bed is constructed on the principle of a vertical adjustment to which are attached the under cylinder, the lower feed rolls, matcher head spindles, guide, etc. The machine is especially adapted for use in job planing mills, and for strong feeding, smooth planing, handy adjustment, excellent workmanship, and the price we charge for it, we are confident its equal is not to be found on the market.

The Cylinders are made of forged steel, and four-sided; two sides are slotted for holding knives to work novelty-siding, beaded-ceiling, moulding, etc. The top cylinder is double belted, has extra long bearings, lined with our best babbitt metal, ample provision being made for lubricating. The under cylinder is adjusted with the bed of the machine for the different thicknesses of stock. The table back of the cylinder is attached to the headstock; by loosening the bolt the table is allowed to swing away from the cylinder, permitting easy access to sharpen or adjust the knives.

The Side-Heads are cast steel, run on large steel spindles, babbitted in strong yoked boxes, and are adjusted to the different widths of stock by hand-wheel on working side of machine. In changing from working flooring to surfacing, the yoked boxes holding the matcher spindles are allowed to swing below the bed by simply loosening the two bolts. The machine is provided with two of our improved pressure bars. The one back of the cylinder is adjusted by screw and hand wheels; the one in front is self adjusting and always regulates itself to different thicknesses of lumber being planed.

The Table and guide are very long, which is a very important point in the manufacture of good flooring. The table is lowered and raised by means of a crank placed convenient to the operator.

The Feed is very powerful, and consists of four feed rolls, all connected and driven by our improved expansion gearing.

The Front Feed Roll is held down by connected levers and weights. This is an improved point, and a good one, as it keeps the front feed roll always level. The back roll is held by steel coil springs, making a strong and positive feed. There are two changes of feed, viz.: 32 and 50 lineal feet per minute.

We build these machines either as a single or double surfer. With each machine we furnish two straight knives, 24 inches long, for each cylinder, one set each of flooring, German siding, rabbeting, beading and joining knives, six steel bolts and nuts to fasten novelty knives, etc., one pair cast steel matcher heads, and all necessary wrenches. The "Shimer" Patent Matcher Heads are furnished with each machine at an additional cost, when wanted.

BELTING REQUIRED.

Two Top Head Belts, 14 feet 2 inches long by 3½ inches wide.

One Belt for Under Head, 18 feet long by 3½ inches wide.

Two Matcher Belts, 15 feet 6 inches long by 3 inches wide.

One Feed Belt, 10 feet 4 inches long by 2 inches wide.

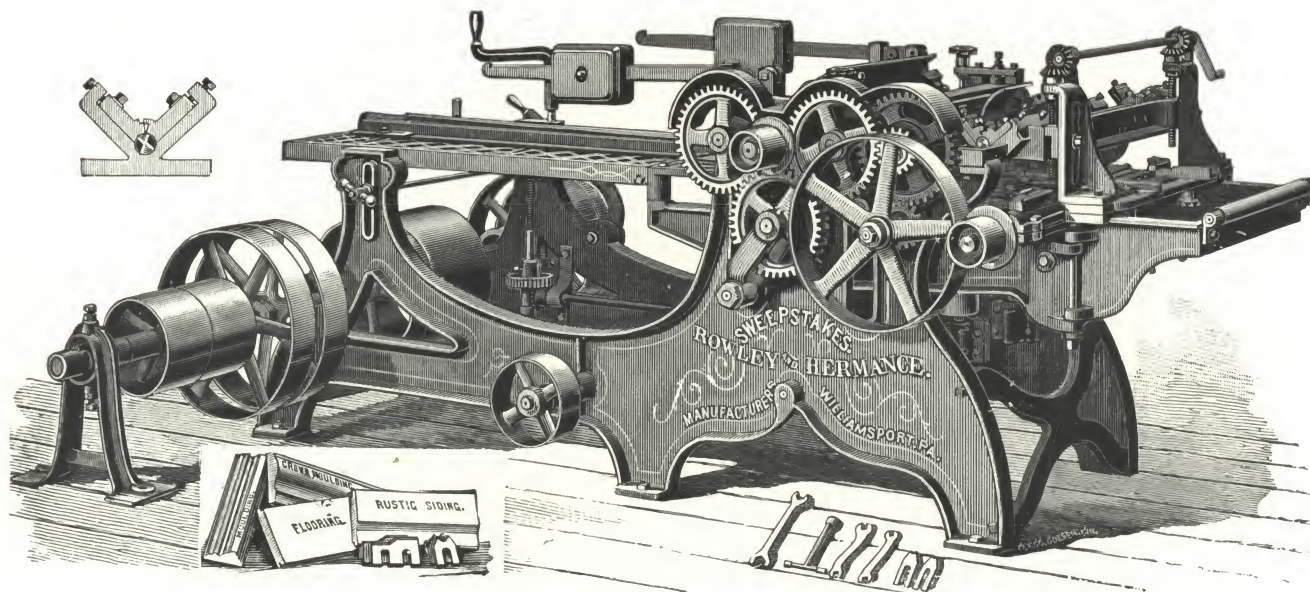
	SIZE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 180 —Double Planer, Matcher and Moulder		12 x 6	900	4,000	Impone.
Fig. 180 A—Single " " " "		12 x 6	900	3,700	Impostor.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 181.

ROWLEY & HERMANCE CO.'S

"Sweepstakes" Planer, Matcher and Moulder.



THE above machine is very heavy for its size, and has the following very important improvements, viz: It is a new design, has solid forged steel head and steel matcher spindles, all running in the patent journal box, which is made in three parts (see cut) so that the journal can be kept central and tight until the box is worn out, thus preventing all tremble and jar of the shaft, which is very important where smooth work is required. It can be very quickly changed to a surfacer only, simply by loosening two nuts, removing the heads, and the spindle will swing below the surface of the table. They can be swung back into position, ready for work, without measuring or changing. It has four $4\frac{1}{2}$ -inch feed rolls, connected with expansion gear, making a very powerful feed.

The Feed Works consist of cone feed pulleys, started or stopped with a belt tightener, and has two rates of feed, 32 feet and 45 lineal feet per minute. There are two pressure bars, one in front and one in rear of surfacing head. It is also provided with chip-breakers.

The Feed Rolls are held down with levers bearing heavy weights, which can be adjusted to light or heavy work.

The Table is long, making room for a long gauge, which is indispensable on a good flooring machine. There is also an extra arbor passing across the width of the machine, in rear of matcher heads, on which there is a slotted steel head. On this head different shapes of knives can be placed for making rustic siding, beaded ceiling, moulding, etc.

Mouldings from $2\frac{1}{2}$ to 5 inches wide can be made on this machine. The matcher heads are made of cast steel, run on heavy steel spindles, and are furnished with patent straight, solid milled matcher bits.

There are over 1,475 of these machines in use, all giving the best of satisfaction. Our idea in building this machine was to furnish a strong, durable, well made, and in fact the best planer and matcher for the price in the market. How well we have attained that end the above amount of sales will show. We have from time to time improved it as occasion demanded. We originally built this machine with the top head belted on one end only. We now build it with top cylinder arranged for belts at both ends, and have added to original price only the actual cost of this improvement.

We furnish with each machine one set (2) straight knives for top cylinder, one set (4) tongue and groove cutters for matcher heads, one set (2) rustic siding knives, and one set (2) beading knives for slotted head on extra arbor, also five wrenches.

Best short-lap belting furnished for machine complete when desired (except belt from tight and loose pulleys to line shaft) at additional cost.

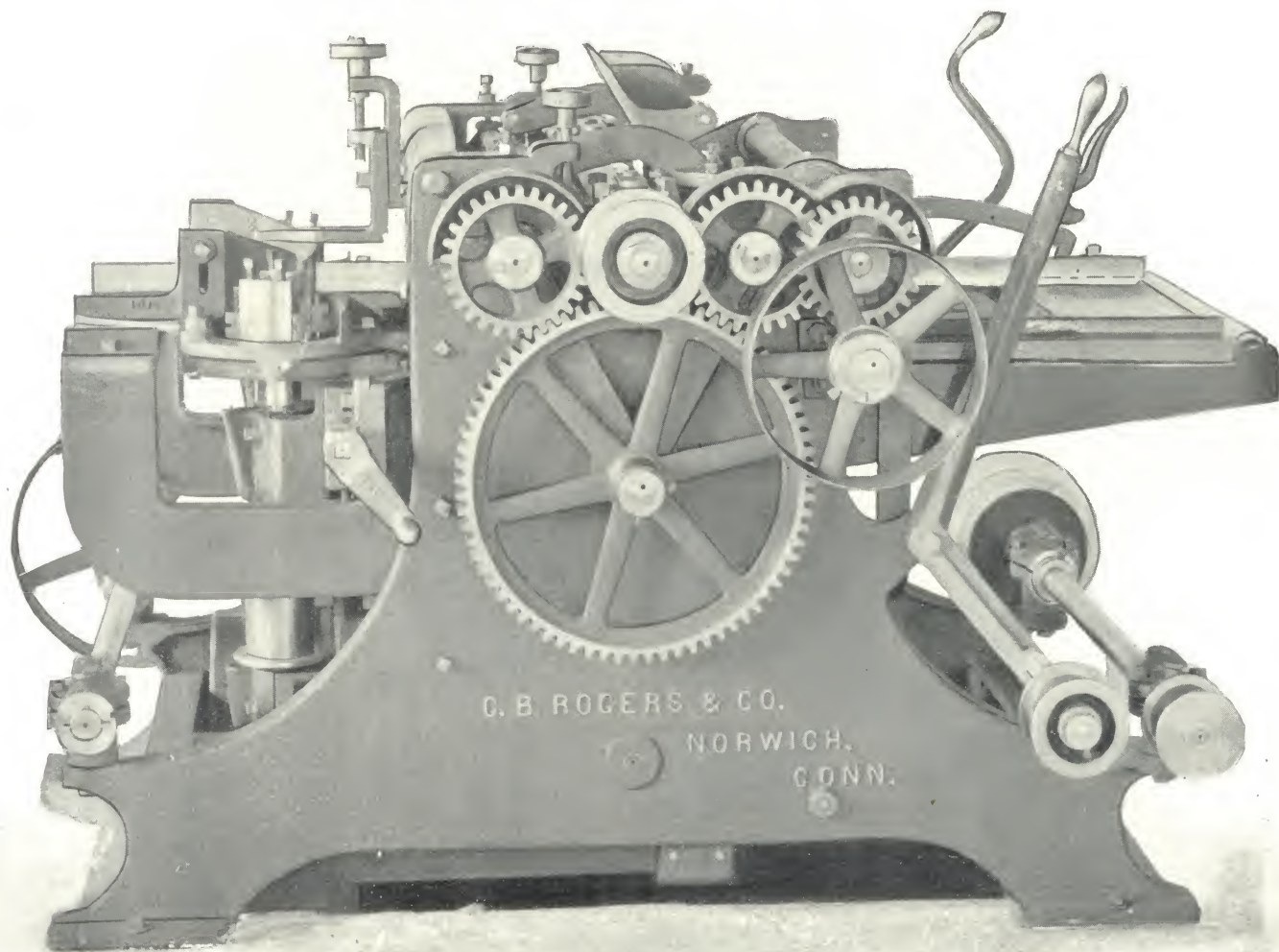
SIZE.	Tight and Loose Pulleys.	Revs. per Minute.	Cubic Measurements.	Approximate Weight.	Average H. P. Required.	Code Word.
Fig. 181 —24-inch Double Surfacers, Matcher and Moulder.....	10 x 8	900	128	3,600	3 to 6	Imprest.
Fig. 181 A—Belting complete, except from T. & L. pulleys to line, extra	.....	.....	.....	.....	.....	Impugn.
Fig. 181 B—24-inch Single Surfacers, Matcher and Moulder.....	10 x 6	900	128	3,200	3 to 5	Impulse.
Fig. 181 C—Belting complete, except from T. & L. pulleys to line, extra	.....	.....	.....	.....	.....	Inachete.
Fig. 181 D—20-inch Single Surfacers, Matcher and Moulder.....	10 x 6	900	128	3,000	3 to 5	Inadvert.
Fig. 181 E—Belting complete, except from T. & L. pulleys to line, extra	.....	.....	.....	.....	.....	Inanity.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 182.

C. B. ROGERS & CO.'S

No. 12, Planer and Matcher.



THE machine shown by above engraving is a light, general jobbing planer and matcher, surfaces 24 inches wide and up to 6 inches thick and matches out to 14 inches.

The Matching Attachment is so arranged that bed can be quickly cleared for surfacing full width.

The General Construction and design of this machine is identical with that of the No. 12 Single and Double Surfacers.

Cylinders three or four-sided as desired, double belted, swinging chip-breaker and adjustable pressure bar, rolls good size, all driven and provided with ample changes of feed.

The Bed is raised and lowered by hand crank within easy reach of the operator and machine belted from the matching end so that as surfacer the operator can stand close to the bed for feeding short stock.

This planer is well made and carefully finished; has all necessary and convenient adjustments, including two step cone for quick change of feed. First feed roll is heavily weighted.

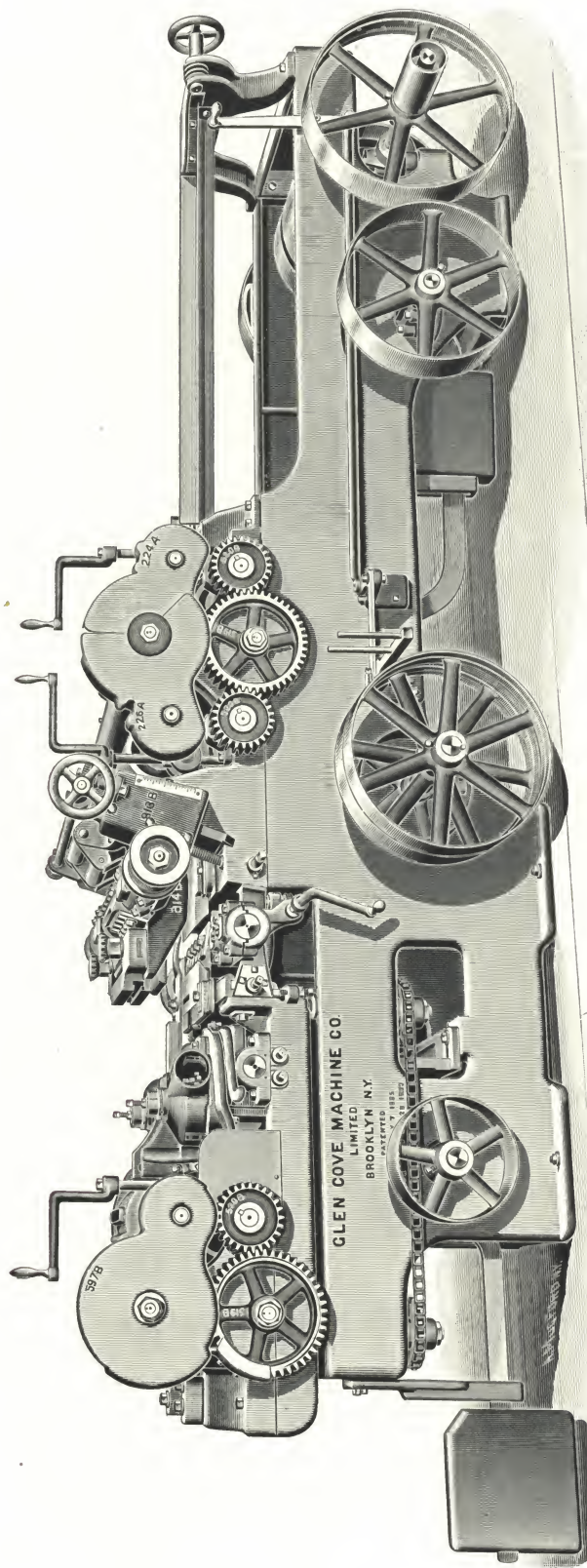
SIZE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 182—Single Planer and Matcher, 24 x 6	12 x 6	900	3,500	Inborn.

See Opposite Page for Description.

Fig. 183.

GLEN COVE MACHINE CO.'S

No. 35, Heavy Hardwood Flooring Machine.



14 inches wide; 6 inches hoist; Six Feed Rolls.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 183.

GLEN COVE MACHINE CO.'S

No. 35, Heavy Hardwood Flooring Machine.

THE cut on opposite page represents our No. 35 Special Hardwood Planing and Matching Machine. It weighs 7,000 pounds, and works lumber from $\frac{1}{4}$ to 6 inches thick, and from 2 to 14 inches wide, on all four sides at one operation.

Its particular features may be designated as follows :

Two Sets of heavily weighted carrying-in rolls, 7 inches in diameter ; a bottom head following immediately after the top head, with a positive presser bar over the same, to which are attached long shoes that keep the board under absolute control, until all the cutter heads are passed ; a combined chip-breaker and hood that completely covers the side heads, thereby preventing chips or shavings from being drawn into the machine from these heads, but which, by merely raising the top locking plates and unhooking the weights, may be swung completely out from the heads, thus rendering them easy of access ; one set of carrying-out rolls, also 7 inches in diameter, with a scraper and cover on the first set to keep all shavings from being pressed into the top surface of the board ; to adjust the bottom cutter head vertically the supplemental frame is raised or lowered, as the case may be, thereby bringing the bottom head presser bar, matcher plates, rolls and fifth cutter head bed in line with same by the single adjustment, or it may be independently adjusted by means of the set screws shown under the yoke. This cutter head yoke may be drawn out at the work side of the machine for sharpening and setting the knives.

The board is dressed top and bottom before it passes to the matcher heads, which are but 14 inches from the bottom head, bringing the entire cutting operation within the short space of 20 inches.

The Patent Weighted Chip-Breaker to side head maintains an even, steady pressure against the edge of the board, swings close to the knife, and prevents splitting or tearing out of knots by the side heads. The piece on the end of this chip-breaker is adjustable for either long or short knives.

By our simple and effective **Patent Parallel Hoisting Device**, each roll is raised by a single screw. The rolls are made to bear squarely across the face of the lumber, whether it be wide or narrow, giving them great traction power and insuring perfectly straight lumber.

The Cutter Heads are forged solid from hard steel. The journals are drawn out from the body of the head, and are integral with it. The journals are 12 inches long and $2\frac{1}{2}$ inches in diameter, and run in improved self-oiling boxes. The heads are square and slotted on all four sides, so that all kinds of solid and sectional knives may be used.

The Cutter Head Pulleys are large in diameter, giving great traction power to the belts. They are not put on with keys or screws, but are carefully fitted to a true taper, and held there by a nut, which method avoids all chance of straining the spindle or throwing the head out of balance. All the shafting is of steel.

Every part or piece of the machine has a number or letter cast or stamped upon it, so that by simply giving the number or letter, duplicates may be readily ordered by wire or mail.

All Shafts and fittings, including bolts, screws and nuts, are finished to U. S. Standard Sizes.

We furnish with this machine 4 knives on top cutter head and 20 cutter head bolts to fasten them on. Two knives on bottom cutter head and 10 bolts to fasten them on. Four 6-inch jointer knives and 8 bolts to fasten them on. Six 2-inch jointer knives, six 1-inch and six $1\frac{1}{4}$ -inch solid milled steel matcher bits. One pair of annealed steel three-winged mortised matcher heads, and one pair steel jointer heads, slotted on all four sides. These jointer heads have our patent method of fastening to the side spindle, doing away with the old set screw.

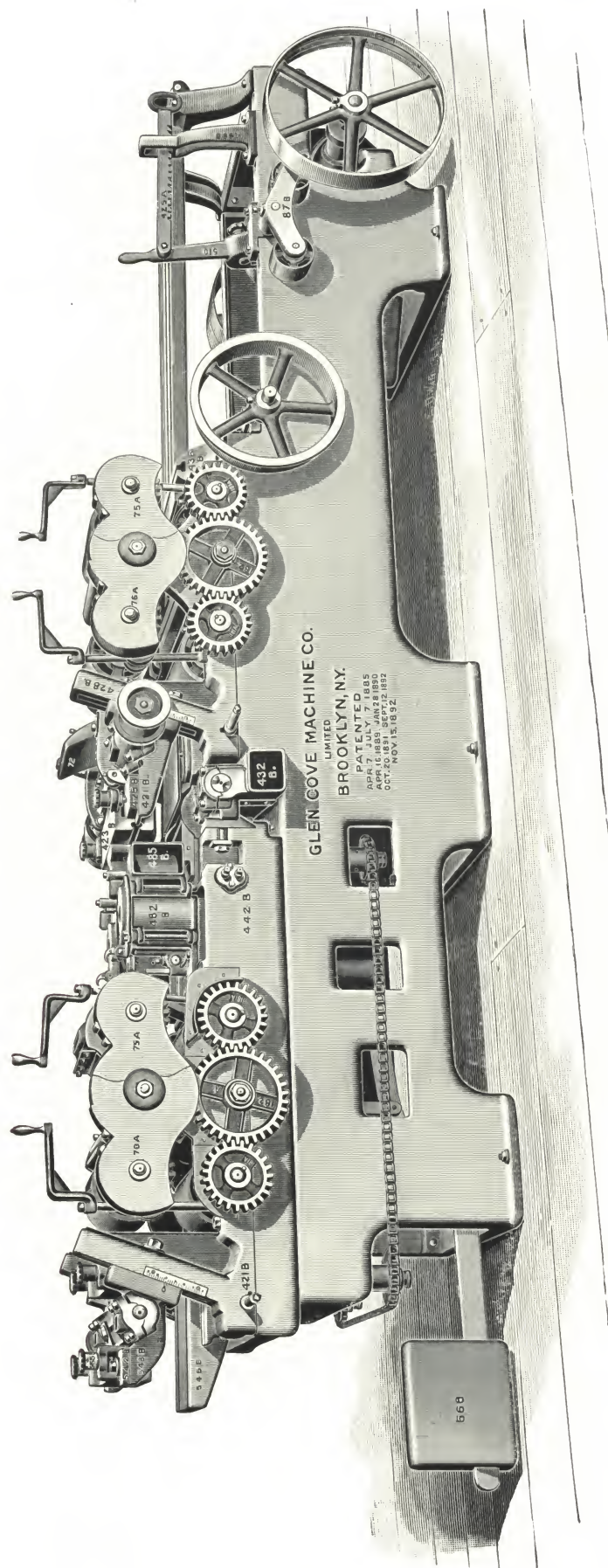
SIZE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 183 —14 x 6, Six Rolls.....	14 x 8	1,000	7,000	Incensor
Fig. 183 A—10 x 6, Six Rolls.....	14 x 8	1,000	6,800	Incentive.

See Opposite Page for Description.

Fig. 184.

GLEN COVE MACHINE CO.'S

No. 56, Heavy Hardwood Flooring Machine.



14 inches wide; 6 inches hoist; Eight Feed Rolls.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 184.

GLEN COVE MACHINE CO.'S

No. 56, Heavy Hardwood Flooring Machine.

WE illustrate on opposite page our No. 56 Heavy Hardwood Flooring Machine. It works lumber from $\frac{1}{4}$ to 6 inches thick, and from 2 inches to 14 inches wide on all four sides at one operation. Its particular features may be designated as follows:

Two Sets of heavily weighted **carrying-in rolls**, eight inches in diameter; a bottom head following immediately after the top head, with a positive presser-bar over the same, to which are attached long shoes that keep the board under absolute control, until all the cutter-heads are passed; a new form of matcher legs, which, while stronger than the old form, may, by simply removing the clamping wedge, be at any time readily removed from the machine while in the mill, for any purpose whatever; **a combined chip-breaker and hood**, that completely covers the sideheads, thereby preventing chips or shavings from being thrown into the machine from these heads, but which, by merely raising the top locking plates and unhooking the weight, may be swung completely out from the heads, thus rendering them easy of access; **two sets of carrying-out rolls**, also eight inches in diameter, with a scraper and cover on the first set to keep all shavings from being pressed into the top surface of the board; **a fifth head** at the extreme carrying-out end of the machine, with an unyielding adjustable presser-bar, both before and after the cut; **a supplemental frame** carrying the bottom head, matchers, carrying-out rolls and fifth head bed, supported on four heavy corner screws, which, in turn, are connected by sprockets and chain, so that by turning one of these sprockets with a wrench, furnished for that purpose, this frame and all the parts supported by it, are raised or lowered in a perfectly parallel relation to each other and to the machine; to adjust the bottom cutter-head vertically, the supplemental frame is raised or lowered, as the case may be, thereby bringing the bottom head presser-bar, matcher plates, rolls and fifth cutter-head bed in line with same by the single adjustment, or it may be independently adjusted by means of the set screws shown under the yoke.

This Cutter-Head yoke may be drawn out at the work side of the machine, for sharpening knives, etc., after loosening two clamp bolts.

The machine has eight feed rolls, and is a powerful fast running machine, with unusual conveniences for setting up.

This machine also has valuable features which have rendered our other machines so acceptable to the trade,—Patent Weighted Chip-breaker to side head; Patent Parallel Hoisting Device to the roll; Patent Gripping Device to side head, and the numbering of parts, so that by simply giving the number or letter, duplicates may be readily ordered by wire or by mail.

Circulars giving further detailed description will be furnished on application.

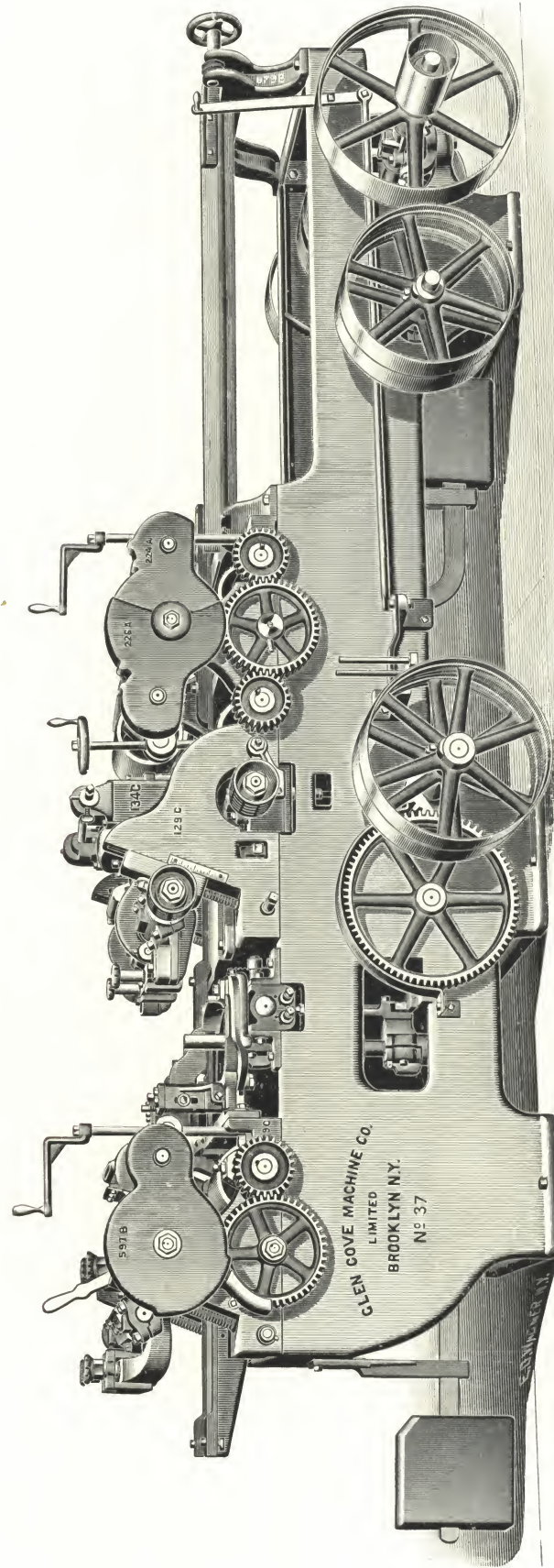
SIZE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 184—14 x 6, Eight Rolls.....	14 x 8	1,000	10,000	Inchord.

See Opposite Page for Description.

Fig. 185.

GLEN COVE MACHINE CO.'S

No. 37, Heavy Hardwood Flooring Machine.



10 inches wide; 6 inches hoist; Six Feed Rolls.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 185.

GLEN COVE MACHINE CO.'S

No. 37, Heavy Hardwood Flooring Machine.

THE illustration on opposite page shows our No. 37 Machine, which is especially designed for the planing and matching of Band Sawed Lumber and also hard maple flooring, for which purpose we have introduced some new and original plans and attachments.

Band sawed stock often presents a rough surface with deep saw marks running directly across the board, which causes it to drag and jump while passing through the machine and makes it very difficult to dress.

The Bottom Head is therefore placed the first in line, and dresses off the bottom surface evenly; the board then passes on to the top cutter head, which is brought to a size slightly full of the required thickness of the finished lumber.

It then passes to the side or matcher heads, being caught just before reaching them and held securely on the matcher plate by both the top and side presser shoes, until it has entirely passed these cutters. These shoes are strong and rigid and neatly arranged with fine adjusting screws so that the operator can bring them to close adjustments.

The Carrying-Out Rolls then carry the board to the fifth head, which makes a finishing cut on the top surface, there being no further feed rolls or presser bars to mar the finished lumber.

The Feed Rolls are 8 inches in diameter, each set being independently driven from the compound shaft by flat faced gears with cut teeth. All gears are neatly cased in, so as to keep them free from dirt and shavings.

The Bottom Cutter Head is arranged in a yoke which is fitted closely into large bearings both sides of the bottom journals and bottom slide bar, and can be drawn out by a screw at the work side of the machine for adjusting and sharpening the cutters. Two large, flat-faced set screws are also introduced here to doubly assure of no vibration.

At the Fifth Head, which is the top cutter head at the extreme carrying-out end of the machine, the presser bar is yielding, but still adjustable for more or less pressure, this being necessary to hold the lumber in the same position as it was while being matched. This is a high speed head which is used to take the finishing cut, to dress off any indentations made by shavings while passing under the rolls, and can also be used for beading, if desired.

The Cutter Heads in this, as in all our machines, are of solid steel, with the bearings drawn out at the end. Each piece is either stamped or numbered, and all bolts, nuts, shafting, etc., are finished to the United States Standard Sizes.

Circulars, giving further detailed description, will be furnished on application.

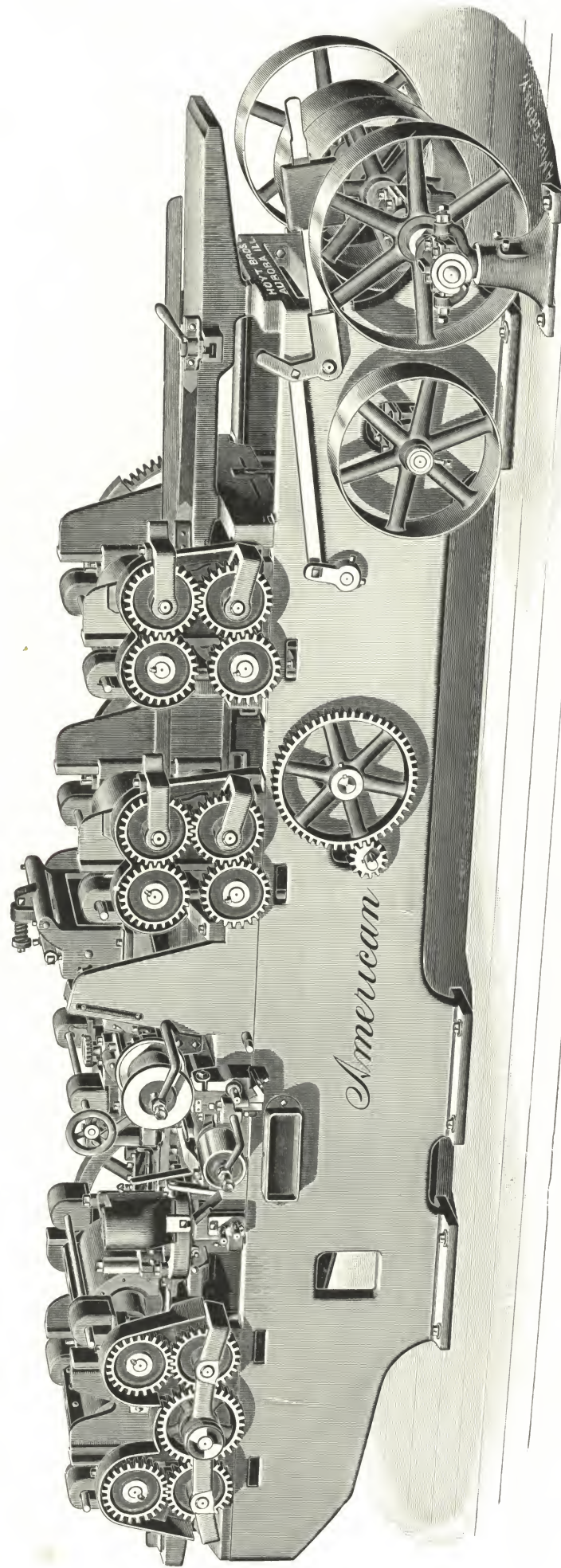
SIZE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 185—10 x 6, Six Rolls.....	14 x 8	1,000	8,000	Incision.

See Opposite Page for Description.

Fig. 186.

HOYT & BROTHER CO.'S

No. 29, Hardwood Planer and Matcher.



9 inches wide; 6 inches hoist; Eight Feed Rolls.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 186.

HOYT & BROTHER CO.'S

No. 29, Hardwood Planer and Matcher.

WE illustrate herewith our New No. 29 Harwood Flooring Machine, which dresses from $1\frac{1}{2}$ inches to 9 inches wide, and from $\frac{3}{8}$ -inch to 6 inches thick.

The Feed consists of eight $9\frac{1}{2}$ -inch rolls, the upper ones having a parallel lift and a superior expansion gear. The Feed Gear is compounded by means of a shaft extending across the machine on to which are keyed the reducing gears.

The Upper and Lower Cylinders have $2\frac{1}{2}$ -inch Journals ; the squares being slotted on four sides and are interchangeable. The Side Spindles are 2 inches diameter in the boxes and are $1\frac{1}{8}$ inches where the head fits on.

The Upper Pressure consists of a parallel lifting **Pony Roller** and a **Chip-Breaker** faced with tool steel, which lifts the circle of the cylinder and may be set so as to just clear the knives when down on the line of the cut, also a rigid pressure bar, back of the cut, which may be adjusted in any direction to suit the operator. The pressure bed above the lower cylinder has an adjustable plate.

The Lower Cylinder Pressure Bars are adjustable, the first one being rigid and faced with tool steel, the back one yielding for the purpose of holding up against the bed lumber with thin or hollow spots.

The Lower Cylinder may be drawn out at the operating side for the purpose of sharpening, or setting the knives. The bars are adjustable to accommodate the different projections of the knives.

The Side Chip-Breaker is governed by a weight, is faced with tool steel, and is adjustable to and from the cut.

The point of the long guide is adjustable to allow for wear and is so strongly held in place that it is impossible for a board, no matter how hard the pressure, to force it back, it is also movable across the machine ; adjustable pins always giving the correct amount of lead.

The Hold-down Arrangement is perfect, both side heads are adjustable across the machine, and each is firmly locked by separate levers. We consider this a more accurate way of locking the side heads, for when both heads are locked with two cams on one shaft a slight wear renders one useless.

We advise dressing face down, as it permits the removal of the surplus stock with the top head and leaves only a limited amount to be removed by the lower one, allowing the pressure bar to be set much closer than any lifting chip-breaker can be, and permits of superior work at a faster feed.

We place both cylinders before the side heads, which permits the lumber to be evenly surfaced on both sides before reaching the side heads, thus insuring perfectly matched flooring.

We furnish with each machine, four knives for each cylinder, one pair 3-wing gun metal side heads, with one set each 2-inch Jointing and 2-inch Matching Bits, one pair of Shimer Flooring Heads, and all necessary wrenches.

BELTING REQUIRED.

Two Belts for Upper Cylinder, $5\frac{1}{2}$ inches wide, 22 feet 2 inches long.

Two Belts for Lower Cylinder, $5\frac{1}{2}$ inches wide, 18 feet 6 inches long.

Two Belts for Side Heads, 5 inches wide, 26 feet long.

One Belt for Feed, 4 inches wide, 17 feet 8 inches long.

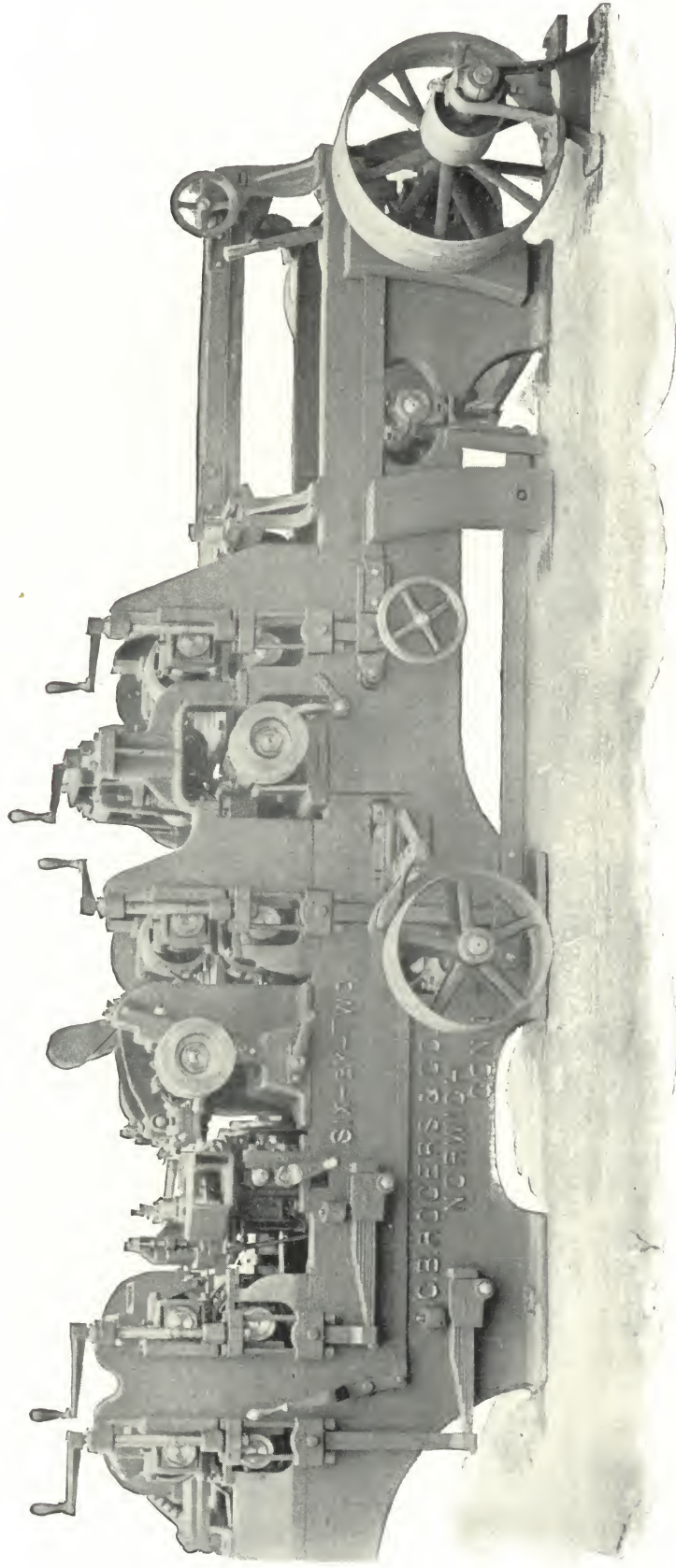
SIZE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 186—9 x 6, Eight Rolls.....	14 x 8	1,000	12,000	Includ.

See Opposite Page for Description.

Figs. 187 and 188.

C. B. ROGERS & CO.'S

"Six by Two" Special Hardwood Floorers.



The above machine is built in Two Sizes, Eight Rolls, to work 10 x 2 and 6 x 2.

AMERICAN WOOD-WORKING MACHINE CO.

Figs. 187 and 188.

C. B. ROGERS & CO.'S

"Six by Two" Special Hardwood Floorers.

THIS machine is designed exclusively for use on flooring, works only 2 inches thick and has the lower head placed between the first pair of feeding-in rolls to dress the stock on the bottom side before it passes to the top cylinder bed plate, a great advantage especially in the band sawed lumber. This is probably the heaviest machine to-day on the market for working these narrow strips. The frame is very heavy, the same as used on our heaviest type of planers and matchers, and the thicknesses for which the machine is arranged admit of making the supports all very heavy.

The Cylinders are very heavy, slotted on four sides with large bearings in heavy yoked boxes, chip-breakers and pressure bars are all adjusted to take care of the necessary projection of knives.

The Side Spindles are also large, boxes yoked and supported on heavy flat cross bars, with a large bearing, and so arranged that they may be clamped firmly in position when set to width. The adjustments around the special lower cylinder are such as to admit of the change of cut without stopping the machine. The first roll and bar before the cut are arranged to raise and lower by means of hand-wheel at the side of the machine, just as the feeding on table of a buzz planer is adjusted. The question of taking the finishing cut on this head in preference to the upper one is one we leave to the judgment of the operator. It may be made to run either way.

The Feed on this machine is novel and very powerful. We use a device for dressing the upper roll that does away entirely with expansion gears, using a **Multiple Star Gear** that allows for all the changes of thicknesses on this class of stock. In this way we reduce the number of parts liable to breakage and the power required to drive the feed as friction is reduced to a minimum. The whole train of gears is very easily geared back to cause but slight strain on the feed belt. The belts on the machine are all long, with ample power both for cylinders and feed. This machine is built with eight large rolls, all driven. There are two pair of feeding-out rolls to insure against stock stopping in the machine. This machine is built regularly in two sizes to work 10 inches wide and 2 inches thick, and 6 inches wide, 2 inches thick, and a special 15-inch machine can be made if desired.

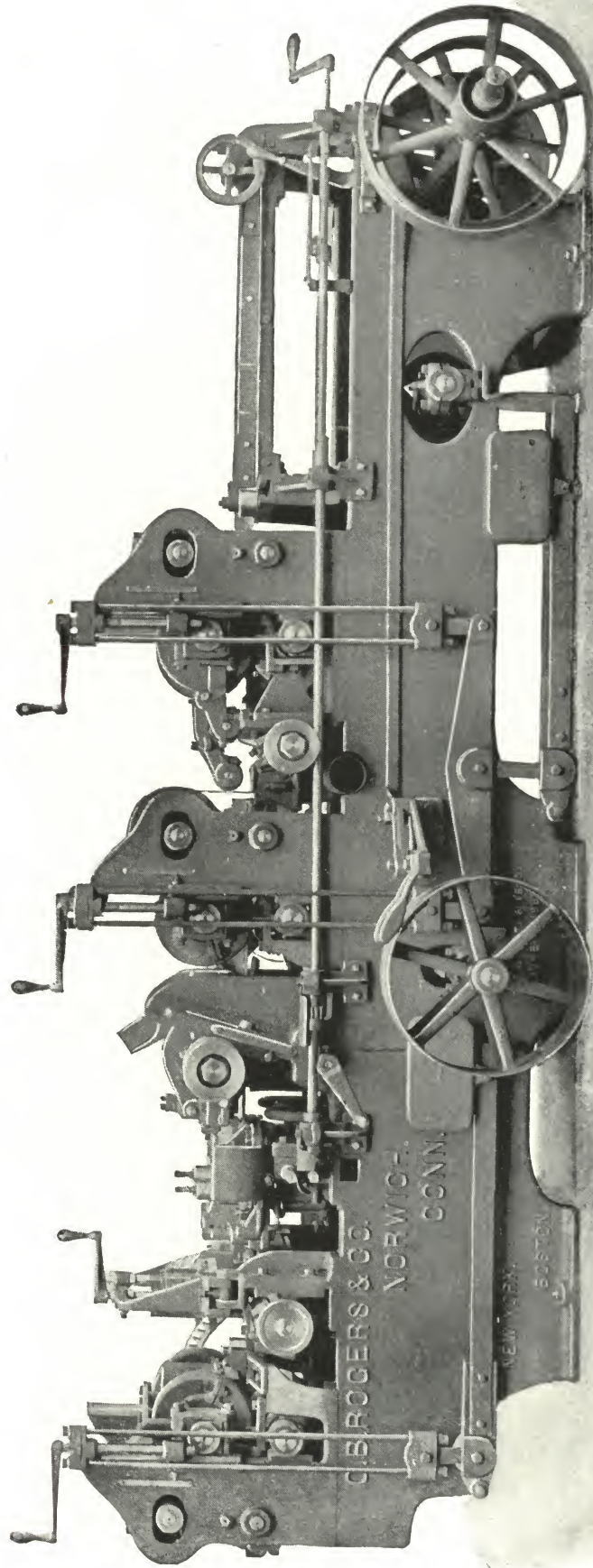
SIZE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 187—Eight Roll, 10 x 2.....	16 x 8	925	12,000	Incony.
Fig. 188—Eight Roll, 6 x 2.....	16 x 8	925	11,400	Incrust.

See Opposite Page for Description.

Figs. 189 and 190.

C. B. ROGERS & CO.'S

Nos. 2 and 4, Planers and Matchers.



The above machine is built in Three Sizes—No. 2 works 15 x 6, 10 x 6 and 9 x 6, having cylinder on end of frame ;
No. 4 is built in the same sizes as No. 2, except it has rolls instead of cylinders on end of frame.

AMERICAN WOOD-WORKING MACHINE CO.

Figs. 189 and 190.

C. B. ROGERS & CO.'S

Nos. 2 and 4, Planers and Matchers.

THESE machines are built on the same general plan and design as the Nos. 1 and 3, but are supplied with a fifth or additional under head placed between the feeding-in rolls and arranged to dress the stock on the under side before it passes to the top cylinder bed plate, a very important feature in connection with machines for working hard wood or band-sawed lumber.

The Adjustments about this lower head are most convenient. It is drawn out to one side of the machine for convenience in setting and sharpening the knives, and the roll and plate in the bed just before the cut of this head is arranged to raise and lower by means of hand-wheel at the side of the machine to regulate the cut. The pressure is ample and adjusts with the feed roll. These machines have been found most successful in operating on band sawed lumber, avoiding the necessity of surfacing the stock first.

The Top Cylinder Bed Plate and support for the cylinder is very heavy and substantial, boxes carrying the cylinders are 10½ inches long, yoked together across the machine and sustain the pressure bar and bonnet chip-breaker, both of which are adjustable to and from the cut to variation of projection.

Lower Cylinder Boxes are the same as the upper and connected in yoke form attached to angle plates, which in turn are attached to the frame. Adjustment of the cylinder is obtained through adjusting screws with check nuts. Cylinder can be raised or lowered at both ends or either end, independent of the other.

Pressure Bar arranged to swing up from either side and bars are both adjustable and can be completely removed when desired, to allow of easy access of lower cylinder.

The Side Spindles are large, run in heavy yoked babbitted boxes with special device for supporting and lubricating the lower end of the spindle. These yokes are supported on heavy flat cross bars and have very large bearing at upper end, adjusted by means of screws and nut. The nut being removable so that when worn to show back lash it can be readily replaced. The yoke is held in position on the bar by means of two loose gibs and can be clamped in position by means of large hand-wheel at the back. Side head has weighted chip-breaker swinging in circle with the cut.

The Feed on this machine is exceptionally strong, and so arranged that cramping of the roll gears or boxes is impossible. We use a very heavy train of gears, and our patented device for connecting the upper roll, which does away with all of the short studs and links used in the old style expansion. The only link in this device is the one connecting the top and first roll shaft boxes, this gear shaft box being the only one that is not fast in the frame. This is held in planed ways and has a movement of about 1¼ inches. The rolls are raised, lowered and weighted on one side only, weights being outside of the frame and easily operated, leaving the inside of the frame entirely unobstructed. The feed is stopped and started by means of tight and loose pulleys and shifter. A range of feed can be provided from 25 to 110 feet per minute.

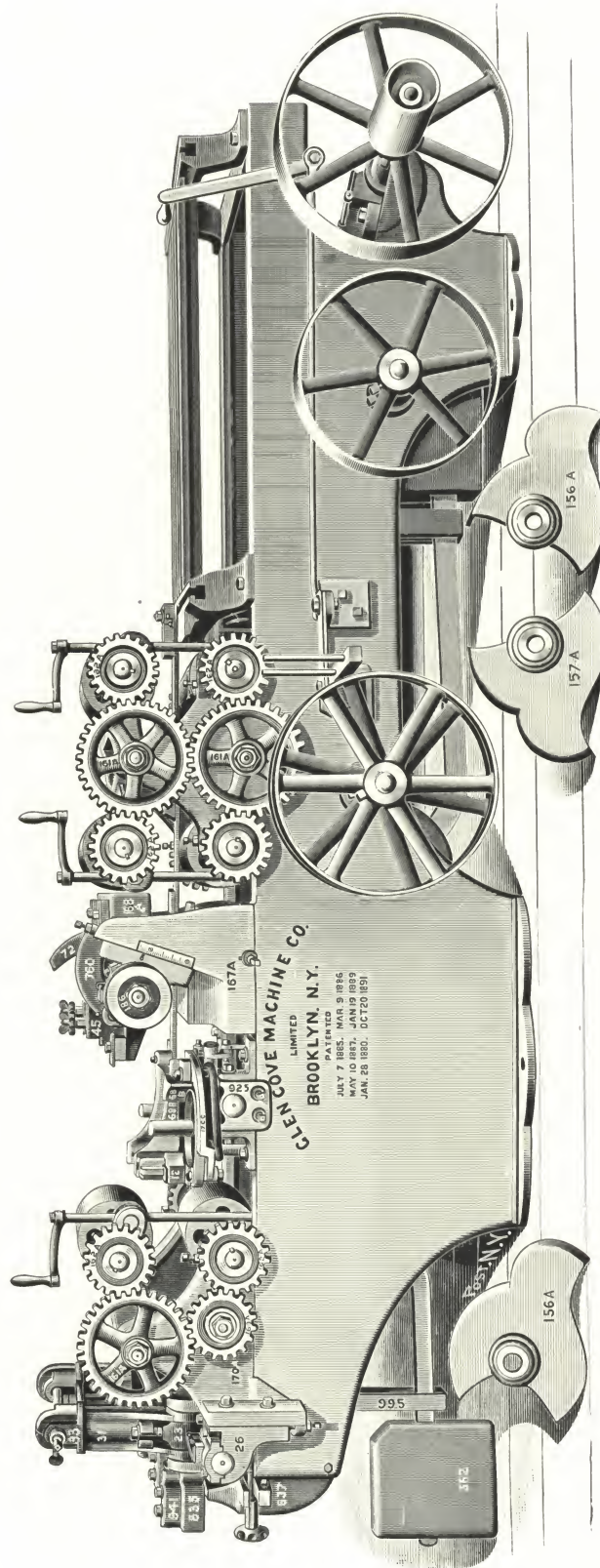
	SIZE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 189 —No. 2, works	15 x 6, Cylinders on End	16 x 8	925	12,500	Indent.
Fig. 189 A—No. 2, “	10 x 6, “ “ “	16 x 8	925	11,900	Inditer.
Fig. 189 B—No. 2, “	9 x 6, “ “ “	16 x 8	925	11,800	Indoor.
Fig. 190 —No. 4, “	15 x 6, Rolls on End	16 x 8	925	12,500	Induct.
Fig. 190 A—No. 4, “	10 x 6, “ “ “	16 x 8	925	11,900	Indulge.
Fig. 190 B—No. 4, “	9 x 6, “ “ “	16 x 8	925	11,800	Indurate.

See Opposite Page for Description.

Fig. 191.

GLEN COVE MACHINE CO.'S

No. 8, Fast Feed Planing and Matching Machine.



18 inches wide; 6 inches hoist; Six Feed Rolls.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 191.

GLEN COVE MACHINE CO.'S

No. 8, Fast Feed Planing and Matching Machine.

THE cut on opposite page illustrates our Fast Feed Planing and Matching Machine. It weighs 8,200 pounds and works lumber from $\frac{1}{4}$ of an inch to 6 inches thick, and from 2 inches to 18 inches wide on all four sides at one operation. For parties who do not want a machine as wide as 24 inches, and wider than 14 inches, this machine will commend itself. It is especially designed to do a large amount of work and has all of our latest improvements, which consist in part of the following :

Parallel Hoist to Feed Rolls.

Weighted Chip-breaker to side head.

Opening End of Machine to get at **Under Cutter-Head.**

Presser Shoes that hold the edge of the board down on matcher plate.

Gripping Device to hold the matcher leg firmly in place when set.

Means by which the matcher plates can be adjusted.

This machine has six feed rolls, and is a powerful fast running machine, with unusual conveniences for setting up.

The Chip-Breaker before the cut, and the presser bars after the cut of the top and bottom heads are adjustable close to and away from the cutting circle of the head, permitting the use of long knives for rabbeting, beading or moulding.

Our Patented Presser Shoes for holding the edge of the lumber firmly down to the matcher plate, while the side heads are acting upon it, insures perfect work. These shoes are adjustable for different thicknesses of lumber.

Our Patent Weighted Chip-breaker to side head maintains an even, steady pressure against the edge of the board, swings close to the knife, and prevents splitting or tearing out of the knots by the side heads.

In order to enable the matcher plate to be kept level with the platen plate, the matcher bar is fastened in pockets, these pockets are secured to the side of the frame by bolts, by loosening which the pocket bar and matcher leg can be raised up by means of one screw until the matcher plate is level with the platen plate.

It is important that these parts be kept level, and with this arrangement it need never be otherwise, as it takes but a few moments to level them up.

The Journals are long and large in diameter, and run in **Improved Self-Oiling Boxes.** The heads are square and are slotted on all four sides, so that all kinds of solid and sectional knives may be used.

Every part or piece of the machine has a number or letter cast upon it, so that by simply giving the number or letter, duplicates may be ordered by wire or mail.

All shafts and fittings, including bolts, screws and nuts, are finished to United States Standard sizes.

We furnish with this machine four (4) knives on top cutter-head, and 24 cutter-head bolts to fasten them on. Two knives on bottom cutter-head, and 12 bolts to fasten them on. Four 6-inch jointer knives and 8 bolts to fasten them on. Six 2-inch jointer knives, six 1-inch and six $1\frac{1}{4}$ -inch solid milled matcher bits. One pair of annealed mortised matcher heads, and one pair of steel jointer heads, slotted on all four sides. These jointer heads have our patent method of fastening to the side spindle, doing away with the old set screw.

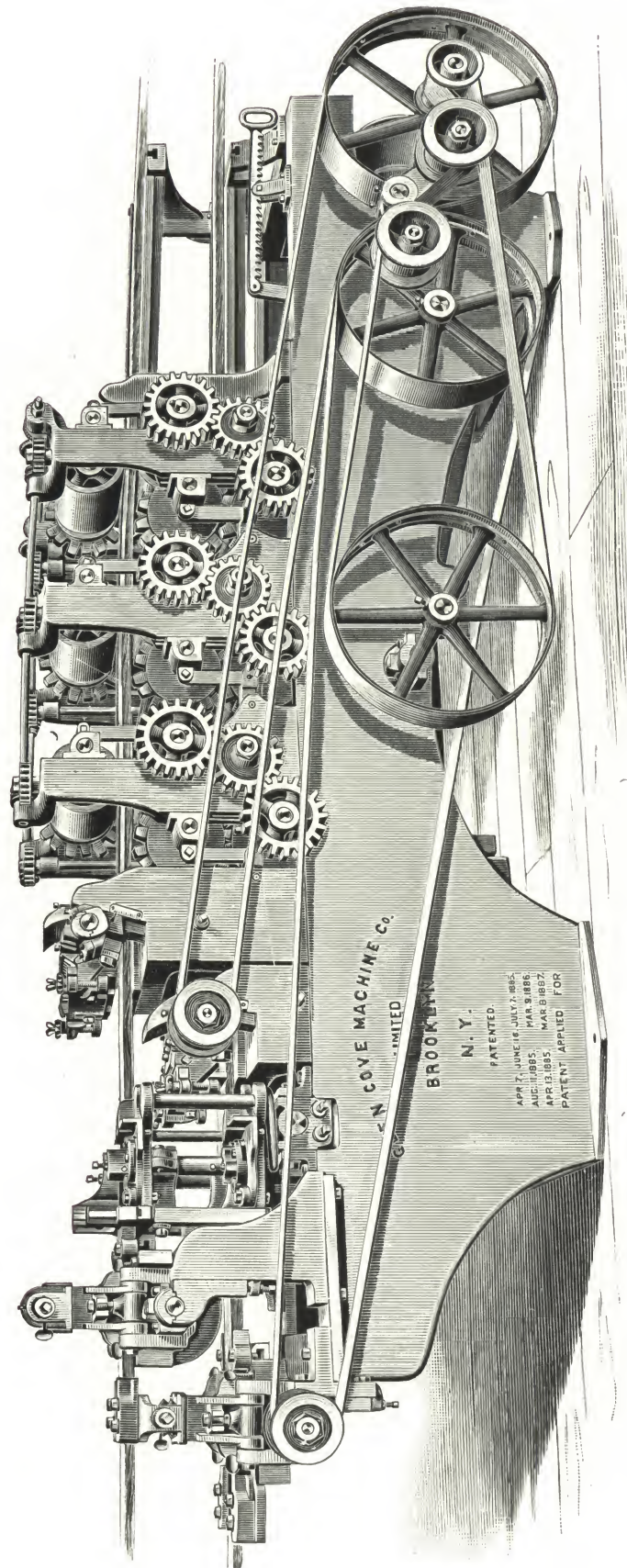
SIZE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 191—No. 8, 18 x 6, Six Rolls.....	14 x 8	875	8,200	Inertly.

See Opposite Page for Description.

Fig. 192.

GLEN COVE MACHINE CO.'S

No. 46, Double Decker.



10 inches wide; 2 inches hoist; Twelve Feed Rolls.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 192.

GLEN COVE MACHINE CO.'S

No. 46, Double Decker.

THE machine on opposite page represents one of entirely original and novel construction. Its object is to do a large quantity of work in the most superior manner. As will be seen, the machine is a double one, or, as we call it, a "Double Decker."

There are **two feed-ways**, one directly over the other; two sets of Feed Rolls (one set of these rolls for each feed-way), two upper and two lower cylinders, and two side spindles, each of them carrying two matcher heads, one above the other. Everything is compact, simple, strong and durable. **The Cylinders** are very stiff, with long bearings that run cool and steady. Either deck may be run independently of the other, that is to say, either the upper or the lower one may be in use while the other is standing still, or both may be run together, giving with a moderate feed on each a large aggregate of perfectly dressed lumber.

Each division of the machine is complete in itself and capable of running at as high a speed as any single machine and doing as good work. The main object, however, is to secure the advantage of a moderate feed which prevents splintering or tearing out of knots, and insures first class work, while the amount of lumber passing through the machine would be very large.

The Double Decker works lumber up to 10 inches wide and 2 inches thick, and takes no more room than a single machine of that width. It requires no more belts and no more pulleys than a single machine, and no greater expense for attendance. As with all of our machines, the cutter heads are of steel, forged solid, with their journals. The cutter head boxes are yoked together, effectually preventing the boxes from getting out of line. Presser bars and chip breakers are adjustable. The Feed Rolls have our parallel hoist. The side heads have our patent **Presser Bar** for perfect matching. The rolls may be raised separately or together. All necessary guides are furnished to hold the lumber in its place while being worked.

Every part or piece has its number cast or stamped upon it to facilitate ordering duplicates by wire or mail. All the shafts and fittings, including bolts, screws, nuts, etc., are finished to United States Standard sizes. All shafting is of steel.

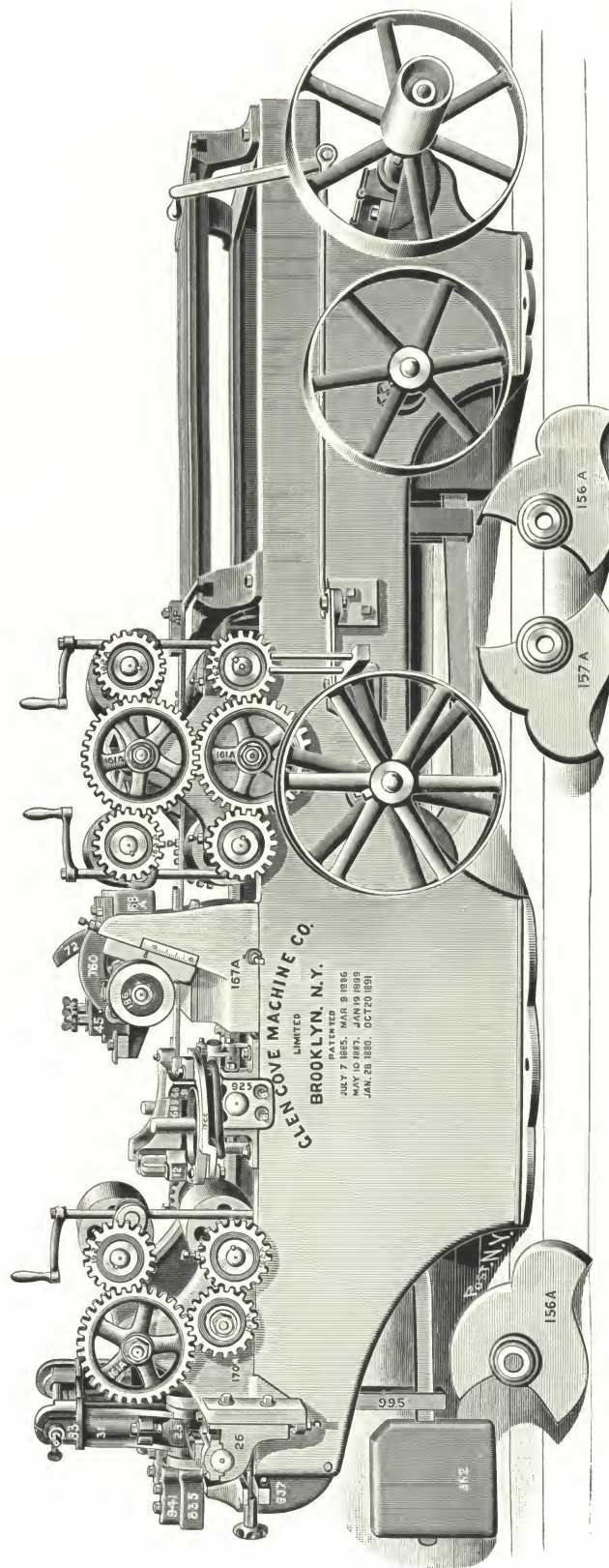
SIZE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 192—No. 46, 10 x 2, Twelve Rolls.....	14 x 8	875	10,000	Infancy.

See Opposite Page for Description.

Fig. 193.

GLEN COVE MACHINE CO.'S

No. 52, Fast Feed Flooring Machine.



10 inches wide ; 6 inches hoist ; Six Feed Rolls.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 193.

GLEN COVE MACHINE CO.'S

No. 52, Fast Feed Flooring Machine.

IN many mills—especially those running Southern pine, or in which flooring is made a specialty—it is not necessary to have a wide machine; for that reason we have designed our No. 52, 10-inch wide, and raising with 6-inch hoist.

The Rolls are 8½ inches in diameter, and it is a powerful, fast running machine. All the working parts are easily accessible, and the machine can be changed quickly from one class of work to another.

Among its many valuable features are the following:

Parallel Hoist to Feed Rolls.

Weighted Chip-Breaker to side head.

Opening End of Machine to get at under **Cutter Head.**

Gripping Device to hold the matcher leg firmly in place when set.

Means by which the **Matcher Plates** can be adjusted.

Presser Shoes that hold the edge of the board down on matcher plates.

The **Matcher Bar** is fastened in pockets, and these pockets are secured on the side of the frame by bolts, by loosening which the pocket bar and matcher leg can be raised up, by means of one screw, until the matcher plate is level with the platen plate under the top cutter head. In this way it takes but a few minutes to level them up.

The **Presser Shoe** in holding the edge of the lumber firmly down to the matcher plates, while the side head cutters are acting upon it, make sure of perfect work, as these shoes catch the edge of the board before the side head strikes it, thereby enabling the operator to dress warped lumber accurately, so that when it is laid there will be no projecting edges.

The **Cutter Heads** are forged solid from hard steel. The journals are drawn out from the body of the head, and are integral with it. This makes the best cutter head in the world.

The **Cutter-Head Pulleys** are large in diameter and this gives great traction power to the belts. They are fitted to a true taper and held there by a nut, by which method all chances of straining the spindle or throwing it out of balance are avoided.

All the shafting is of steel.

Every part or piece of the machine has a number or letter stamped upon it, so that by simply giving the number or letter, duplicate parts may be ordered by wire or mail.

All shaftings and fittings—including bolts, screws and nuts—are finished to United States Standard sizes.

Circulars giving further detailed description will be furnished on application.

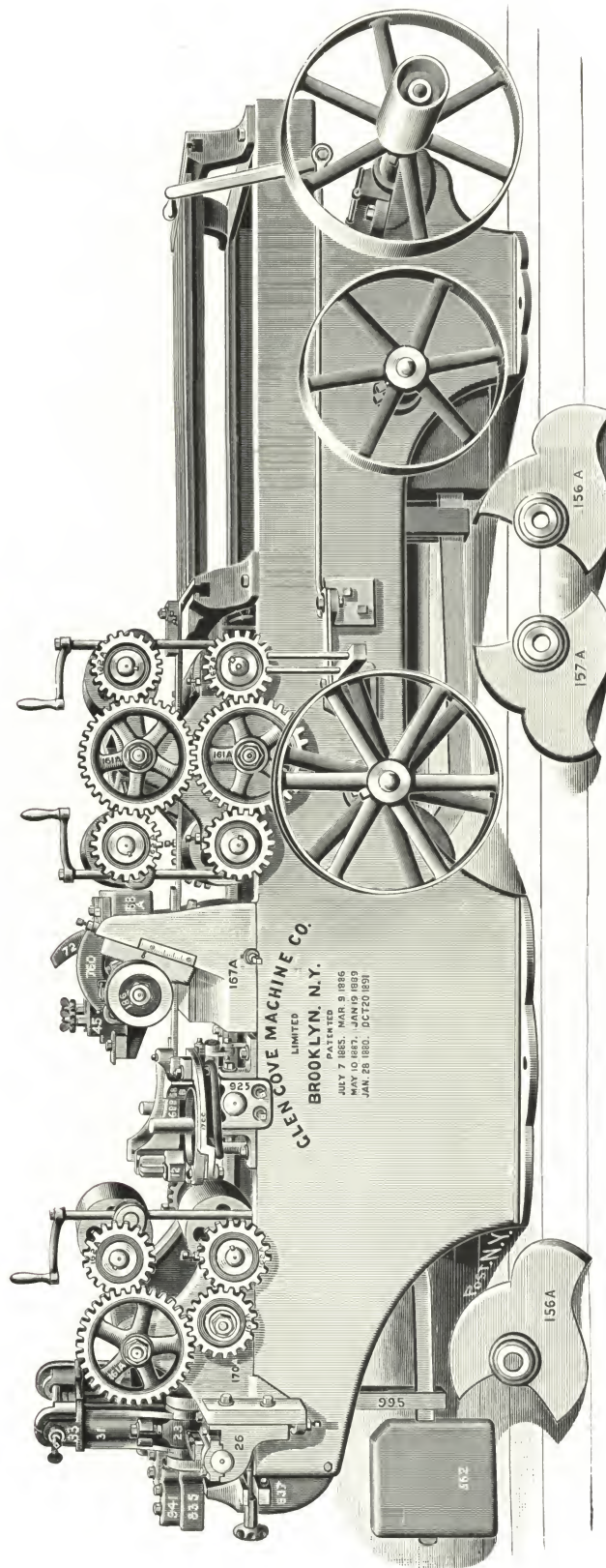
SIZE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 193—No. 52, 10 x 6, Six Rolls.....	14 x 8	1,000	7,200	Infective.

See Opposite Page for Description.

Fig. 194.

GLEN COVE MACHINE CO.'S

No. 55, Fast Feed Flooring Machine.



14 inches wide; 6 inches hoist; Six Feed Rolls.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 194.

GLEN COVE MACHINE CO.'S

No. 55, Fast Feed Flooring Machine.

THIS cut on opposite page illustrates our No. 55 Fast Feed Flooring Machine. It weighs 7,800 and works lumber from $\frac{1}{4}$ inch to 6 inches thick and from 2 inches to 14 inches wide on all four sides at one operation.

The rolls are $8\frac{1}{2}$ inches in diameter, and it is a powerful fast running machine. All the working parts are easily accessible, and the machine can be changed quickly from one class of work to another.

Among its many valuable features are the following:

Parallel Hoist to Feed Rolls.

Weighted Chip-Breaker to side head.

Opening End of Machine to get at under **Cutter Head**.

Gripping Device to hold the Matcher Leg firmly in place when set.

Means by which the **Matcher Plates** can be adjusted.

Presser Shoes that hold the edge of the board down on Matcher Plates.

The Cutter-Heads are forged solid from hard steel. The journals are drawn out from the body of the head, and are integral with it. This makes the best cutter head in the world.

The Cutter-Head Pulleys are large in diameter and this gives great traction power to the belts. They are fitted to a true taper and held there by a nut, by which method all chances of straining the spindle or throwing it out of balance are avoided.

The Matcher Bar is fastened in pockets, and these pockets are secured to the side of the frame by bolts, by loosening which the pocket bar and matcher leg can be raised up, by means of one screw, until the matcher plate is level with the platen plate under the top cutter head. In this way it takes but a few moments to level them up.

The Presser Shoe in holding the edge of the lumber firmly down to the matcher plates, while the side head cutters are acting upon it, make sure of perfect work, as these shoes catch the edge of the board before the side head strikes it, thereby enabling the operator to dress warped lumber accurately, so that when it is laid there will be no projecting edges.

All shafting is of steel.

Every part or piece of the machine has a number or letter stamped upon it, so that by simply giving the number or letter, duplicate parts may be ordered by wire or mail.

All shaftings and fittings—including bolts, screws and nuts—are finished to United States Standard Sizes.

Circulars giving further detailed description will be furnished on application.

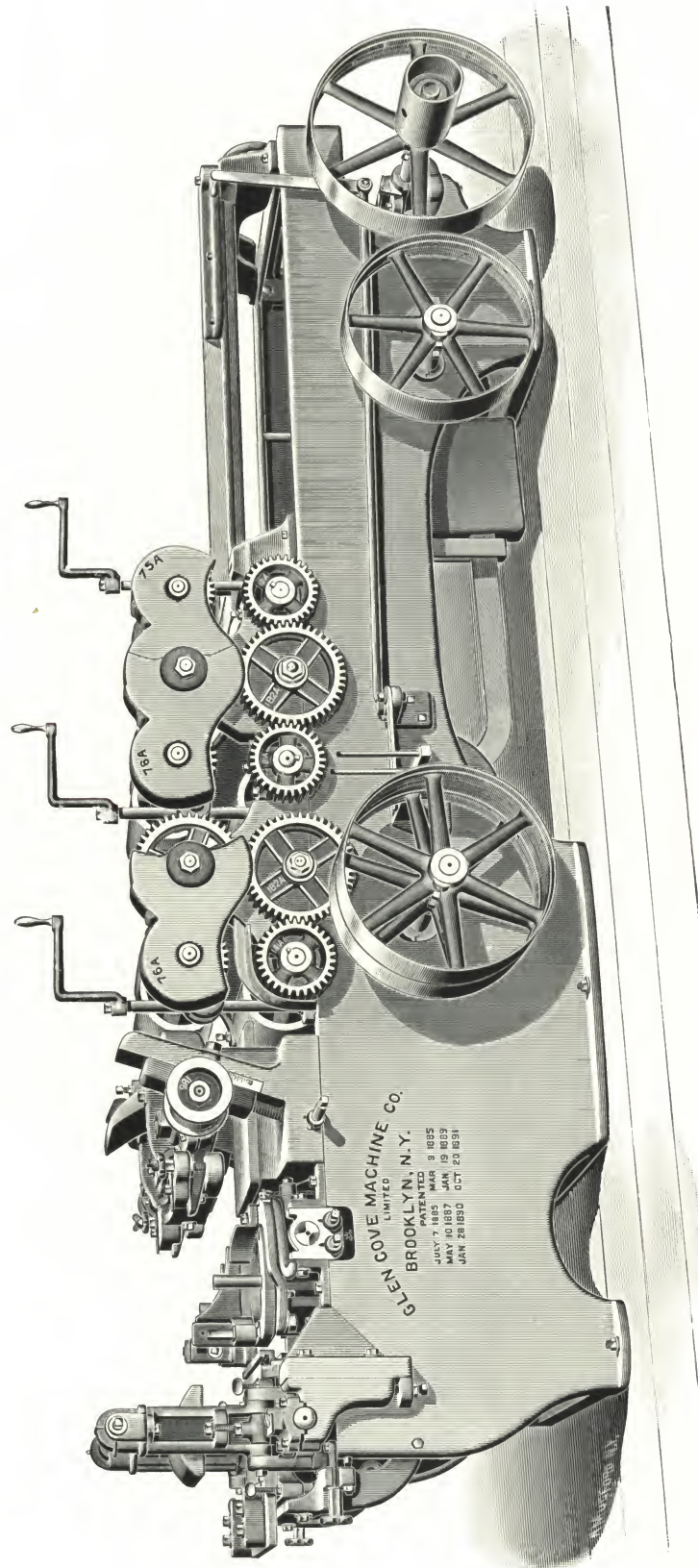
SIZE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 194—No. 55, 14 x 6, Six Rolls.....	14 x 8	1,000	7,800	Inference.

See Opposite Page for Description.

Figs. 195 and 196.

GLEN COVE MACHINE CO.'S

Special Nos. 55 and 52, Fast Feed Planers and Matchers.



The above machine is built in Two Sizes—Special No. 55 works 14 x 6 and the Special No. 52 works 10 x 6.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 195.

GLEN COVE MACHINE CO.'S

Special No. 55, Fast Feed Planer and Matcher.

THE cut on the opposite page shows our "Special" No. 55, and represents a new departure in construction, from the fact that it has three pair of Feed Rolls in front of the cutter head, having no carrying-out roll. This prevents roll or shaving marks from showing on the smooth face of the lumber, where piping is imperfectly done. This trouble exists to such an extent in some mills, where much pitch pine is run, that it is customary not to use the carrying-out roll for dressing the best grades of flooring, but by placing the three pair of rolls in this way, a strong, powerful feed is assured, and the danger of roll marks is eliminated.

This machine has the same valuable features that have made the Regular 55, page 235, so popular, and is especially designed for rapid, first class work, and is easily set up.

Fig. 196.

GLEN COVE MACHINE CO.'S

Special No. 52, Fast Feed Planer and Matcher.

IN many mills using a large number of machines and running exclusively on flooring, a narrow machine is in many cases more acceptable than a wide one, and for that reason we build this Special No. 52, 10 inches wide.

In general features, it is the same as the Special No. 55, shown in the cut on opposite page, only that it is 10 inches wide instead of 14 inches.

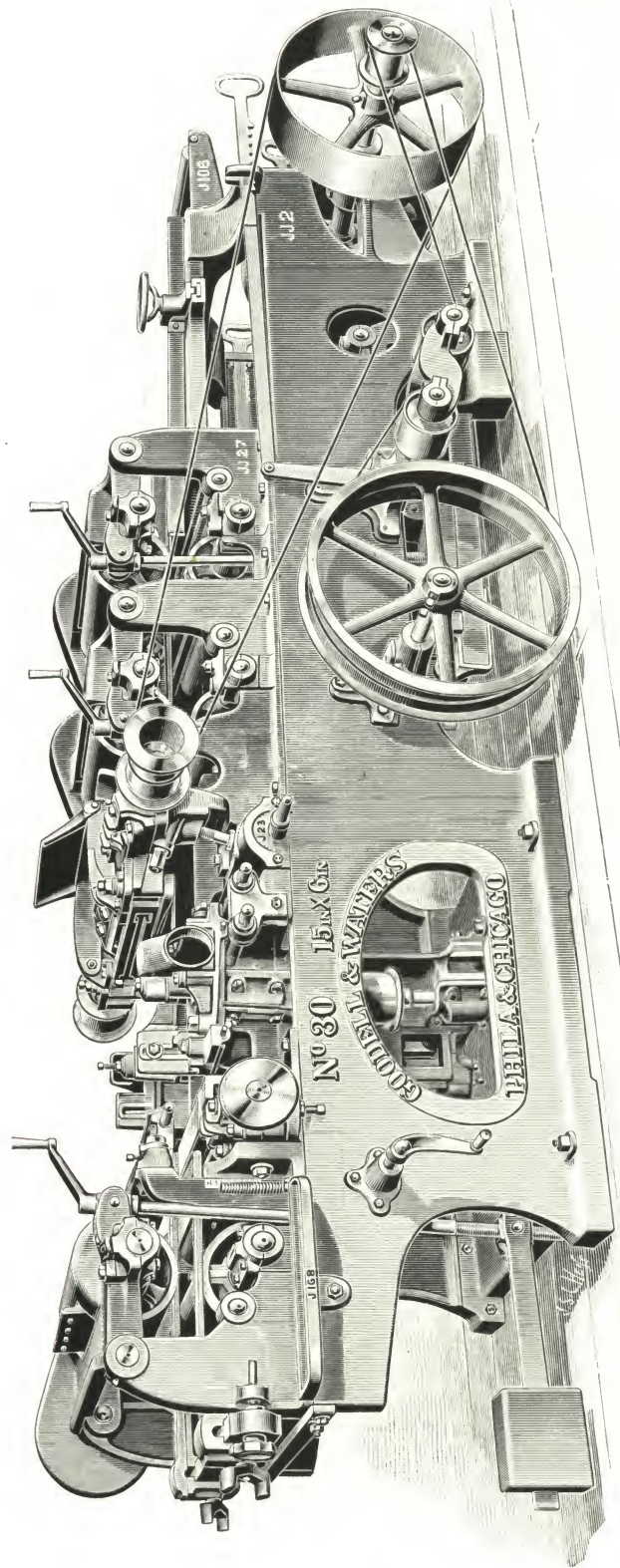
The narrowing up of a machine adds to the strength and accessibility, that together with the valuable features of the Regular No. 55, page 235, commends itself as a first class FLOORER.

SIZE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 195—Special No. 55, 14 x 6.....	14 x 8	1,000	8,100	Infested.
Fig. 196—Special No. 52, 10 x 6.....	14 x 8	1,000	7,500	Infidel.

Fig. 197.

GOODELL & WATERS'

No. 30, Rapid Feed Flooring Machine.



Patented August 26, 1884, August 18, 1896.

THERE are many points of superiority in design and construction in this machine. The upper and lower heads are carried in double yoked frames. The side head frames are of new design and very heavy. They are readily clamped and remain perfectly rigid when set. **The Upper and Lower Head Journals** are provided with our patented device to prevent end play, which can be adjusted while the machine is in operation. Will double surface and match 15 inches wide, 6 inches thick. There are **Six Rolls**, carried in parallel swing arms.

Each Roll is adjusted independently and has weighted pressure. The pressure platen over the under head is of entirely new design, having the vertical parts inverted and placed in the body of the machine. This gives a clear open space on the top of the machine, and free access to the cutter head.

The Side Head Belts run over a drum pulley which is constructed as a tightener. This permits the operator to effect the proper strain on the belts. The upper and lower cutter heads are four-sided, slotted on four sides.

Every Part or Piece of the machine has a number cast or stamped upon it, so that by simply giving the number of the machine and number on part wanted, duplicates can be ordered by wire or by mail.

Belting Required: Two top head belts, each 19 feet 2 inches long, 5 inches wide; one under head belt, 23 feet 8 inches long, 5 inches wide; two side head belts, each 21 feet 3 inches long, 3 inches wide; one feed belt, 18 feet long, 3½ inches wide.

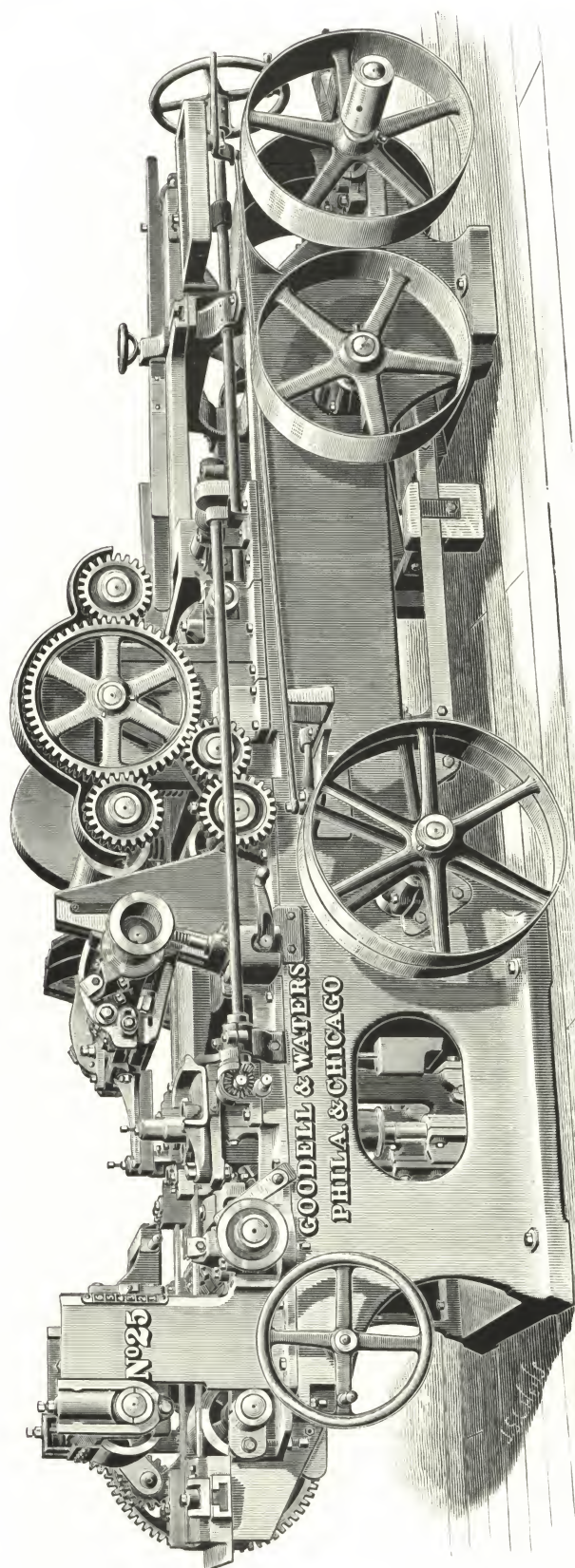
SIZE.			
T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
14 x 8	900	9,000	Infinite.

Fig. 197—No. 30, 15 x 6, Six Rolls

Fig. 198.

GOODELL & WATERS'

No. 25, Rapid Feed Flooring Machine.



THE FRAME of the machine is constructed in a most superior manner. The sides have a tubular or cored section running the entire length. The cross girts and the top and bottom head frames are extra heavy. The fence or long guide is moved and locked by a single device in combination with the right hand matcher head. **The Feed Rolls** are double geared, 8 inches diameter. The top delivery roll and pressure plate over the under cylinder are adjusted in the one operation. Both entry feed rolls are raised in the one operation from the in-feeding end of the machine and have improved method of effecting pressure on the material. The method of raising the pressure plate over the under head and the device by which the entry bar is dropped away from the head give free access for sharpening or adjusting the knives. The knives may be sharpened without swinging the entry bar over.

The Side Head Frames are clamped to the cross bar by an entirely new and improved method. The matcher head chip-breaker is exceedingly heavy and kept firmly against the work by a weighted pressure. This machine works 15 inches wide up to 8 inches thick.

We desire to call special attention to the device used on all the heads to prevent end play. This is an important improvement, and is no doubt quicker to adjust and better than any other method in use.

Every Part or Piece of the machine has a number cast or stamped upon it, so that by simply giving the number of the machine and number on part wanted, duplicates can be ordered by wire or by mail.

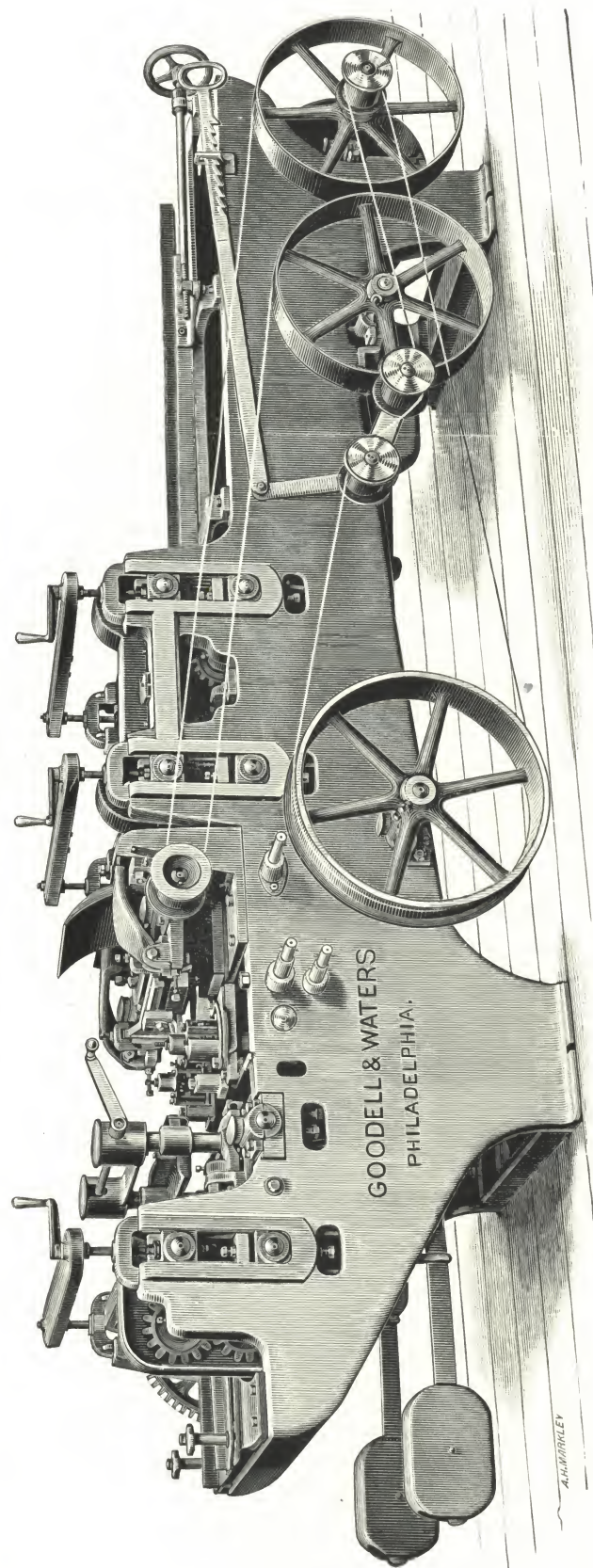
Beltng Required : Two top cylinder belts, each 20 feet 2 inches long, 5 inches wide ; one bottom cylinder belt, 19 feet 6 inches long, 5 inches wide ; two side head belts, each 22 feet long, 3½ inches wide ; one feed belt, 18 feet 6 inches long, 4 inches wide.

SIZE.			
Fig. 198—No. 25, to work 15 inches wide, 8 inches thick.....	T. and L. Pulleys.	Revs. per Minute.	Weight.
	14 x 8	900	11,000
			Code Word.
			Inflate.

Fig. 199.

GOODELL & WATERS'

No. 9, Flooring Machine.



Patented August 26, 1884.

A FAST feed flooring machine with all the devices and improvements of our famous "Keystone" Floorer, with the exception of having feeding-out rolls. It is built to fill a demand for a machine which will turn out the same quantity and quality of work as the "Keystone," and feed out each piece independently. In designing it we have taken care to make the under cylinder as convenient and accessible as possible.

The Pressure Bar over the under cylinder can be swung entirely away from it while filing or setting the knives. All parts of the machine have been proportioned and adjusted to obtain the highest speed attainable with safety and economy.

The Receiving Pressure Bar for the upper cylinder is hinged in such a manner that it can be set close to the knives and swung clear over and away from them without danger of contact with them. Both pressure bars are adjustable to and from the knives to allow moulding or siding cutters, projecting two inches, being used. It has our improved expansion and raising gears, and care has been taken in its construction to reduce the number of pieces and make all parts simple, accessible and durable. We build two sizes, to work 7 inches or 14 inches wide and 4 inches thick.

Every part or Piece of the machine has a number cast or stamped upon it, so that by simply giving the number of the machine and number on part wanted, duplicates can be ordered by wire or by mail.

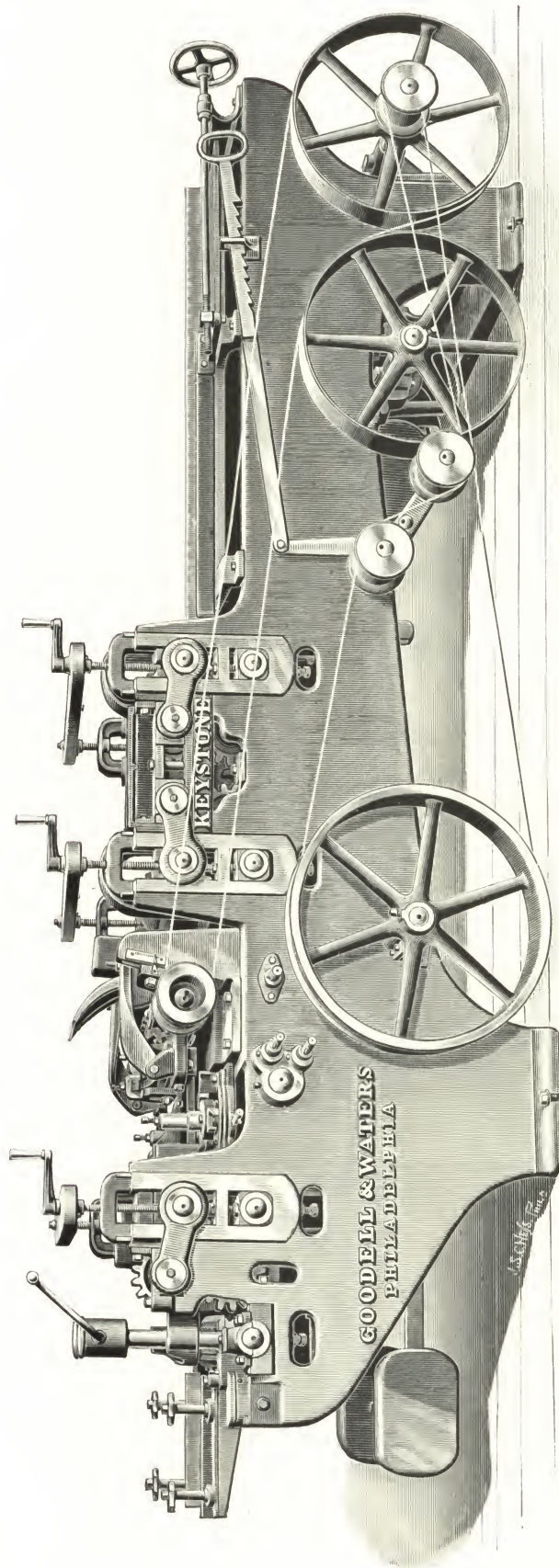
Belt Required: Two top head belts, 20 feet 9 inches long, 4 inches wide; one under cylinder belt, 20 feet long, 4 inches wide; two side head belts, 21 feet 4 inches long, 3½ inches wide; one feed belt, 19 feet 1 inch long, 3½ inches wide.

	SIZE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 199 —Double Surfacers and Matcher, 14 x 4	14 x 4	12 x 8	850	7,300	Inflicter.
Fig. 199 A—Single	"	"	"	"	Infliger.
Fig. 199 B—Double	"	"	"	"	Influxion.
Fig. 199 C—Single	"	"	"	"	Infract.

Fig. 200.

GOODELL & WATERS'

"Keystone" Flooring Machine.



Patented August 26, 1884.

WE recommend the “**Keystone**” as a thoroughly first-class rapid feed flooring machine in every particular. They are in use in every section of the country, and without a single exception these machines have never failed to give entire satisfaction. It is designed especially for floor, ceiling, siding and all narrow work. Can be used to a certain extent for mouldings.

All the Details have been constructed with a view to convenience, accuracy, and the highest speed and fastest feed attainable with economy.

We have simplified it in every way possible without impairing its efficiency. It has our new expansion and raising gears, which have been much improved. The pressure bars are both adjustable to and from the cutters to allow for moulding or siding knives.

It has the **Improved Hinged Pressure Bar** which can be set close to the cutters, and has an unlimited raise without danger of coming in contact with them. It has improved matcher stands and patent chip-breakers.

Both Upper and Under Cylinders are four-sided, with two sides slotted. Can be slotted on four sides if required. We put on any style of matcher heads desired. They are built to plane 7 inches or 14 inches wide, as required, and 4 inches thick.

Every Part or Piece of the machine has a number cast or stamped upon it, so that by simply giving the number of the machine and number on part wanted, duplicates can be ordered by wire or by mail.

Belt Required: Two top head belts, 20 feet 9 inches long, 4 inches wide; one bottom head belt, 20 feet 11 inches long, 4 inches wide; two side head belts, 21 feet 4 inches long, 3½ inches wide. Three feed pulleys go with each machine, 4, 6 and 8 inches diameter. The 8-inch pulley requires belt 19 feet 4 inches long, 3½ inches wide.

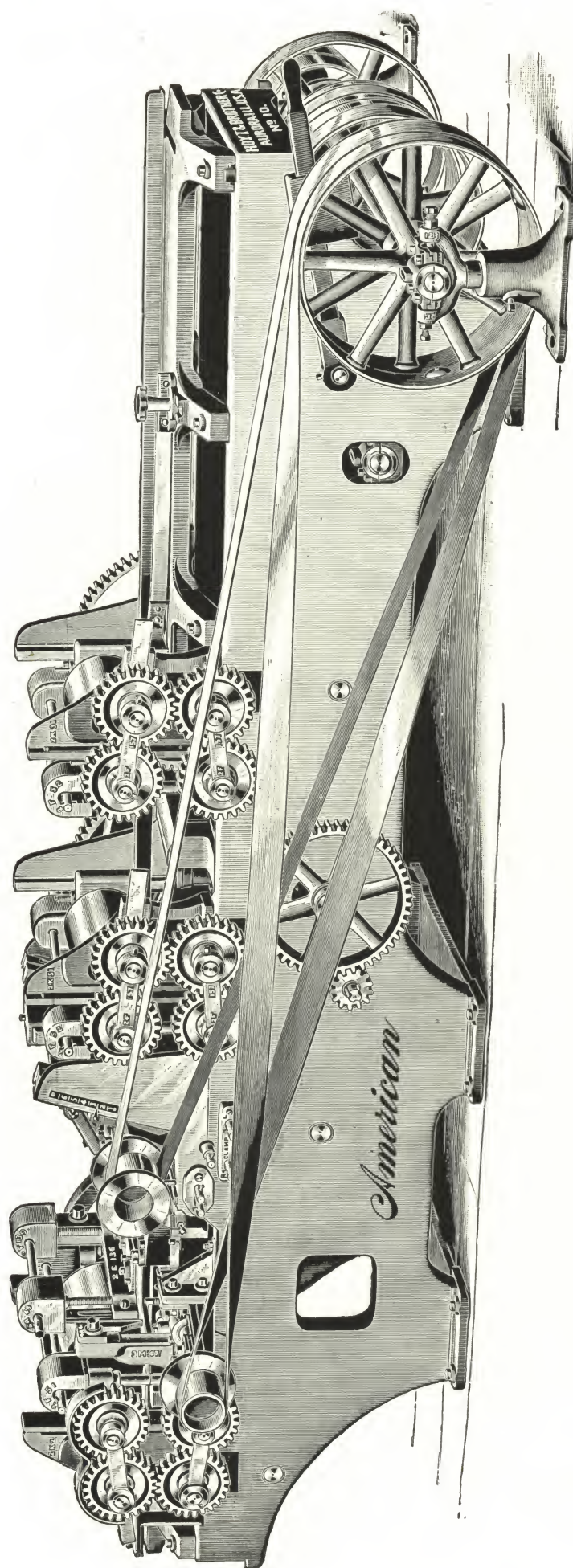
	SIZES.	T. and L. Pulleys,	Revs. per Minute.	Weight.	Code Word.
Fig. 200 —Double Surfacar and Matcher, 14 x 4.....	" " "	12 x 8	850	7,000	Infringe.
Fig. 200 A—Single " " ".....	" " "	14 x 4	850	6,500	Infultas.
Fig. 200 B—Double " " ".....	" " "	7 x 4	850	6,500	Infusion.
Fig. 200 C—Single " " ".....	" " "	7 x 4	850	6,000	Ingraft.

See Opposite Page for Description.

Figs. 201, 202 and 203.

HOYT & BROTHER CO.'S

Nos. 9, 10 and 11, Improved Six-Roll Double Planers and Matchers.



The above machine is built in Three Sizes: No. 9 works 9 x 6; No. 10 works 15 x 6; No. 11 works 19 x 6.

No. 11 is also built to carry 8-inch Side Head, with Sectional In-feeding Rolls and Center Guide.

AMERICAN WOOD-WORKING MACHINE CO.

Figs. 201, 202 and 203.

HOYT & BROTHER CO.'S

Nos. 9, 10 and 11, Improved Six-Roll Double Planers and Matchers.

THE engraving on the opposite page represents our Improved New Series Planers and Matchers. We use but six gears and a pinion in giving motion to feed rolls, one only of these running idle, all others are keyed onto shafts of sufficient length to reach across the machine. The expansion gear are of new design, and we believe unexcelled. We use large driving feed pulleys (which may be quickly changed), giving high speed to feed belt, so very little tension is required.

The Extreme Length of these machines is 14½ feet over all. The frame is modern, exceedingly strong, well supported and braced. The rolls are 9½ inches in diameter. We use an equalizer of novel construction, the arms of which carry the nuts to the screws, for raising and lowering the rolls. We get two satisfactory results from this method of building. One, a parallel lift to the rolls; another, avoiding stripping the thread from either the nut or screw. We still adhere to elliptic spring pressure for the feed rolls. Over twenty-five years constant use of springs confirms our judgment that they give the best pressure for planers.

Our Cylinders are made of steel, and are slotted on all four sides; are alike top and bottom, so that knives are interchangeable. The spindles are 2½ on upper and 2¼-inch on lower, and have bearings over 12 inches long. The matcher stocks, or yokes, which carry the side spindles, have improved boxes, and may be separately and rigidly locked. The adjusting nuts on these matcher stocks are of brass, and interchangeable. Our spindles rest on a bronze step, and run constantly in standing oil, and never heat. They are of large diameter, with top end to fit heads of 1 9-16 bore.

The Under Cylinder Boxes are yoked together and are three in number. The pressure bars are quickly removed for convenience in setting knives, and replaced without requiring adjustment. Notice that the draft or pull of the belt to the under cylinder is not on the bolts that hold the boxes to place, but against a bracket cast on the frame, and while very simple in its construction, it is important in giving a solid support to the cylinder bearings. The bed plate under top cylinder is of steel, ¾ inch thick, and can be quickly removed when necessary for re-dressing. The matcher stocks are similarly arranged. The side head belts run over a drum pulley inside the frame, and are carried parallel to the pulleys on the spindles. Are also kept separate by an effective belt spreader.

We continue the use of the pony roll in front of the cylinder to ease the entrance of the lumber, and the boxes to the roll form a support to our patent chip-breaker, so that, as the lumber enters the machine, the chip breaker is lifted by the roll until the board engages the chip-breaker.

Peculiar Merit is in this patent chip-breaker. It may be set within ¼ inch of the cut, and no matter what variance in thickness of the lumber, it cannot be run into the knives. Nor is it possible to wedge the chip-break, no matter how heavy the cut. Both the chip-breaker and back pressure bar may be quickly moved to or from the cylinder, allowing for any reasonable swing of cutters.

This series of planers and matchers are alike in all things except in width of cut and the No. 11 is built with sectional as well as solid rolls and can be built to carry 8-inch side-head if desired. No. 9 has 9-inch knives. No. 10 has 15-inch knives. No. 11 has 19-inch knives.

The machines will dress from ¾ to 6 inches thick, and dress and match full width of cut. The matcher spindles are strong enough to carry 6-inch side heads. The feed is held taut with the double pulley and weighted wrought iron binder lever. There are four speeds of discharge, namely: 40, 60, 80 and 100 lineal feet per minute. The upper cylinder belts run close to the machine, with lower cylinder and feed belts outside. All bearings may be oiled without stopping. On each corner are projecting lugs, which are dressed perfectly true. In setting machine, place straight-edge on these and set machine level.

We send with each machine the knives on top and bottom cylinder; one full set beader bits; one set 1-inch Shimer flooring heads; one set three-wing gun metal side heads, with one set each 1-inch jointer, 2-inch jointer, and 2-inch matcher bits, and all necessary wrenches.

BELTING REQUIRED.

Upper Cylinder, 44 feet 2 inches, 5½ inches wide.
Lower Cylinder, 25 feet 10 inches, 4½ inches wide.
Side Heads, 47 feet 2 inches, 5 inches wide.
Feed, 18 feet 9 inches, 4 inches wide.

SIZE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 201 —No. 9, works 9 x 6	14 x 8	{ 900 to 1,000 }	8,600	Ingress. Inhabit. Inhesion. Initial.
Fig. 202 —No. 10, works 15 x 6	14 x 8		9,400	
Fig. 203 —No. 11, works 19 x 6	14 x 10		10,500	
Fig. 203 A—No. 11, works 19 x 8	14 x 10		10,500	

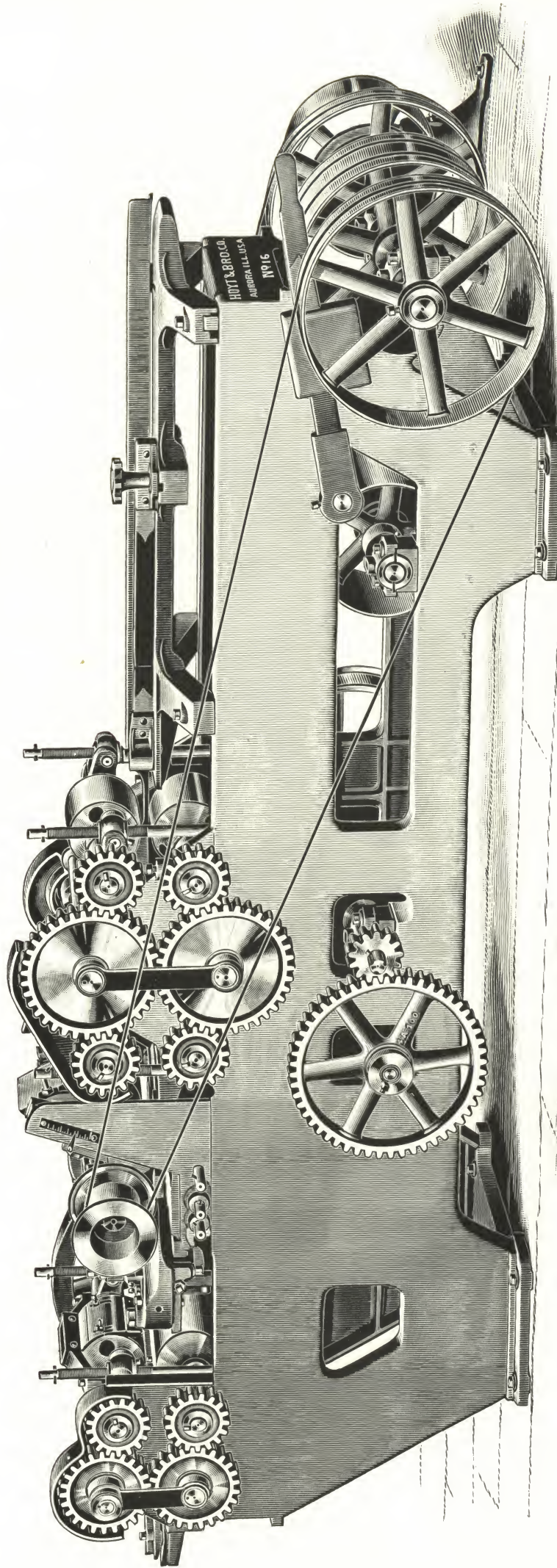
(and has sectional in-feeding rolls and center guide.)

See Opposite Page for Description.

Figs. 204 and 205.

HOYT & BROTHER CO.'S

Nos. 16 and 17, Single Cylinder Six-Roll Planers and Matchers.



The above machine is built in Two Sizes: No. 16 works 7 x 4 and No. 17 works 14 x 4.

Either will Surface from $\frac{3}{8}$ to 4 inches thick.

AMERICAN WOOD-WORKING MACHINE CO.

Figs. 204 and 205.

HOYT & BROTHER CO.'S

Nos. 16 and 17, Improved Single Cylinder Six-Roll Planers and Matchers.

THE engraving on the opposite page represents one of our Second New Series Improved Planers and Matchers. These machines are very much lighter and of less value than our New Series Improved.

The Framework of the Second New Series Improved is modern and simple, reference being made to great strength and convenience of access to working parts. The extreme length is twelve feet over all. The rolls are six and one-half inches in diameter and have a parallel lift. They may be adjusted from either side of the machine. Strong pressure is used for the rolls. We use large driving feed pulleys (which may be very quickly changed), giving high speed to feed belt, so very little tension is required.

Our Cylinders are made of steel, and are slotted on all four sides. The spindles are two inches flush in diameter, and have long bearings. Spindles to the side heads are of large diameter, and the side heads are bored 1 5-16 inches. We use our standard matcher stock with oil cup or receiver at the bottom of the spindle, and that end runs constantly in a cup of standing oil. They have their end support on bronze steps.

The Bed Plate under top cylinder of these machines can be quickly removed when necessary for re-dressing. The matcher stocks are similarly arranged. The side head belts run over a drum pulley inside the frame, and are carried parallel to the pulleys on the spindle.

These Machines have a perfect chip-breaker to the top cylinder that is quickly and easily adjusted, and may be set close to the line of cut or back far enough to allow for any reasonable swing of the knives. All bearings may be oiled without stopping. On each corner are projecting lugs, which are dressed perfectly true. In setting machine, place straight-edge on these, and be sure they are level.

We build these matchers in two widths. No. 16 has a 7-inch cylinder. No. 17 has a 14-inch cylinder. Either will surface from $\frac{3}{8}$ to 4 inches thick. The feed belt is held taut with a double pulley and weighted binder lever. They discharge on three feeds, 40, 60 and 80 lineal feet per minute.

We send with each machine the standard knives on the cylinder, one set beader bits, one set 1-inch Shimer flooring heads, one set gun metal heads, with one set each 1-inch matcher, 2-inch jointer and $\frac{3}{8}$ -inch ceiling bits, and all necessary wrenches.

BELTING REQUIRED.

35 feet 8 inches, 5 inches wide, for cylinder.
38 feet 8 inches, 4 inches wide, for side heads.
14 feet 3 inches, 4 inches wide, for feed.

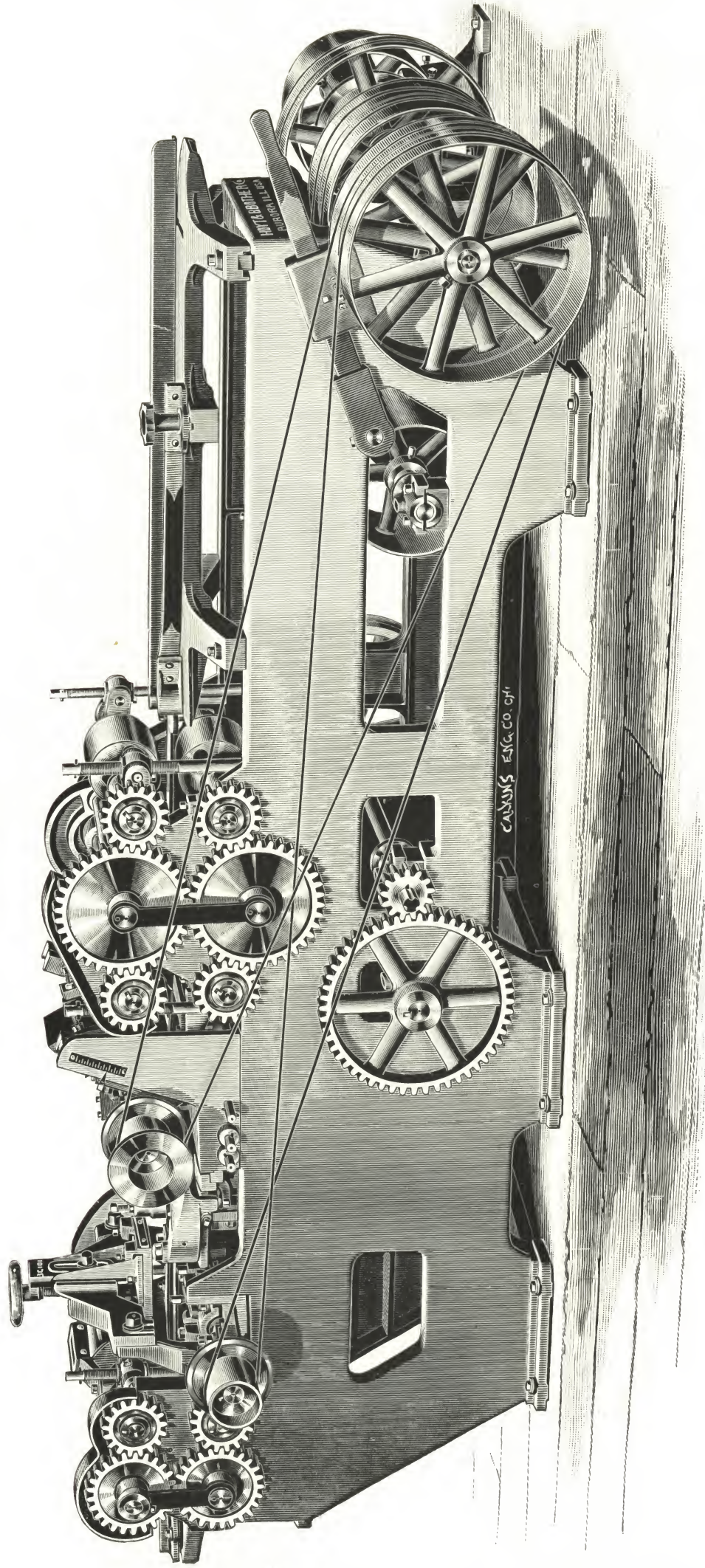
SIZE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 204—No. 16, works 7 x 4.....	14 x 7	1,000	4,400	Inkling.
Fig. 205—No. 17, works 14 x 4.....	14 x 7	1,000	5,000	Inkpot.

See Opposite Page for Description.

Figs. 206 and 207.

HOYT & BROTHER CO.'S

Nos. 18 and 19, Improved Six-Roll Planers and Matchers.



The above machine is built in Two Sizes: No. 18 works 7 x 4 and No. 19 works 14 x 4.

Either will dress from $\frac{3}{8}$ to 4 inches thick.

AMERICAN WOOD-WORKING MACHINE CO.

Figs. 206 and 207.

HOYT & BROTHER CO.'S

Nos. 18 and 19, Improved Planers and Matchers.

THE engraving on the opposite page represents our Second New Series Improved Planers and Matchers. The framework is modern and simple, reference being made to great strength and convenience of access to working parts. The extreme length is 12 feet over all. The rolls are $6\frac{1}{2}$ inches in diameter, and have a parallel lift. They may be adjusted from either side of the machine. Strong pressure is used for the rolls. We use large driving feed pulleys (which may be very quickly changed), giving high speed to feed belt, so very little tension is required.

Our Cylinders are made of steel, are slotted on all four sides; are alike top and bottom, so that knives are interchangeable. The spindles are 2 inches flush in diameter, and have long bearings. Spindles to the side head are of large diameter, and the side heads are bored 1 5-16 inches. We use our standard matcher stock, with oil cup or receiver at the bottom of the spindle, and that end runs constantly in a cup of standing oil. They have their end support on bronze steps.

The Under Cylinder Boxes are yoked together. The pressure bars are quickly removed for convenience of setting knives, and replaced without requiring adjustment. Notice that the draft or pull of the belt to the under cylinder is not on the bolts that hold the boxes to place, but against a bracket cast on the frame, and while very simple in its construction, it is important in giving a solid support to the cylinder bearings. The bed plate under top cylinder can be quickly removed when necessary for dressing. The matcher stocks are similarly arranged. The side head belts run over a drum pulley inside the frame, and are carried parallel to the pulleys on the spindles.

These machines have a perfect chip-break to the top cylinder that is quickly and easily adjusted, and may be set close to the line of cut or back far enough to allow for any reasonable swing of the knives. All bearings may be oiled without stopping. On each corner are projecting lugs, which are dressed perfectly true. In setting machine, place straight-edge on these, and be sure they are level.

We build these matchers in two widths. No. 18 has 7-inch cylinders. No. 19 has 14-inch cylinders. They will dress from $\frac{3}{8}$ to 4 inches thick.

The Feed Belt is held taut with a double pulley and weighted binder lever as shown in engraving. They discharge on three feeds, 40, 60 and 80 lineal feet per minute.

We send with each machine the standard knives on the cylinders, one set beader bits, one set 1-inch Shimer flooring heads, one set gun metal heads, with one set each 1-inch matcher, 2-inch jointer and $\frac{3}{8}$ -inch ceiling bits, and all necessary wrenches.

BELTING REQUIRED.

35 feet 8 inches, 5 inches wide, for top cylinder.
21 feet 2 inches, 4 inches wide, for bottom cylinder.
38 feet 8 inches, 4 inches wide, for side heads.
14 feet 3 inches, 4 inches wide, for feed.

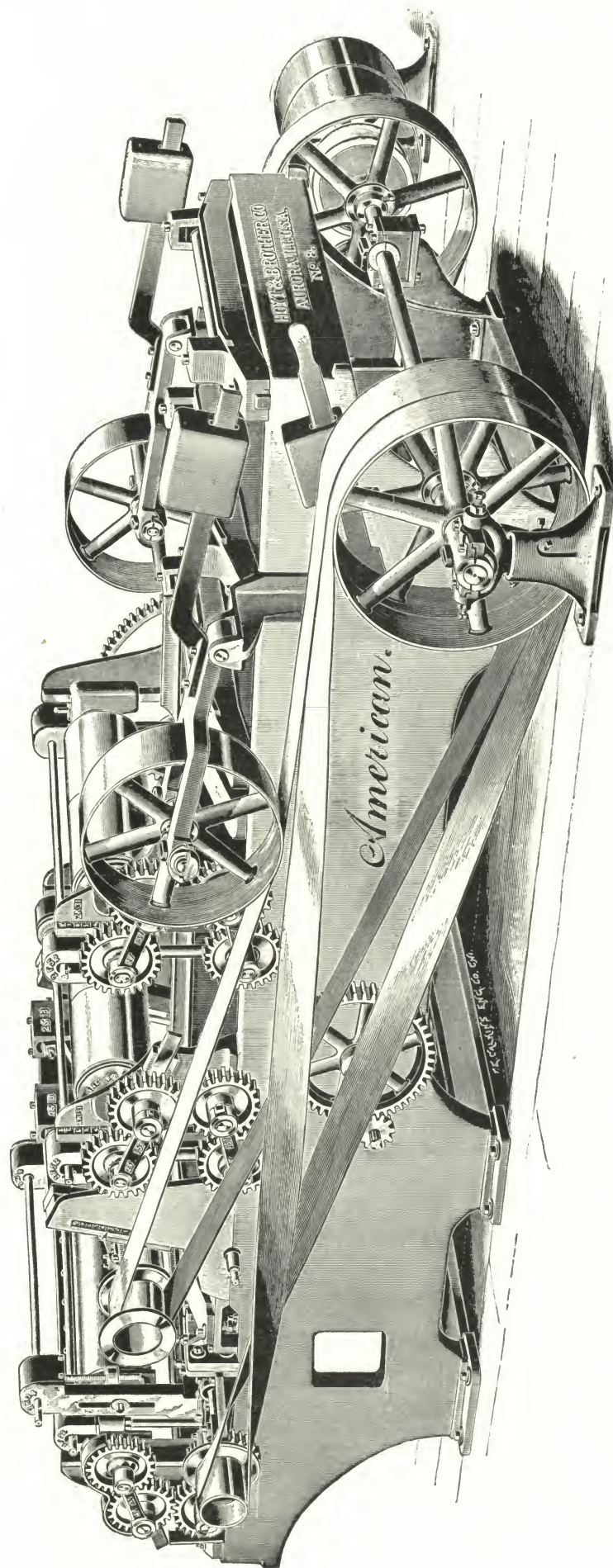
SIZE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 206—No. 18, works 7 x 4.....	14 x 7	1,000	5,200	Innocence.
Fig. 207—No. 19, works 14 x 4.....	14 x 7	1,000	6,000	Innovate.

See Opposite Page for Description.

Figs. 208 and 209.

HOYT & BROTHER CO.'S

Nos. 8 and 8½, Patent Roller Feed Surfacers.



The above machine is built in Two Sizes: No. 8 Surfaces 30 x 8 and No. 8½ Surfaces 26 x 8.

AMERICAN WOOD-WORKING MACHINE CO.

Figs. 208 and 209.

HOYT & BROTHER CO.'S

Nos. 8 and 8½, Patent Roller Feed Surfacers.

WE illustrate on the opposite page our No. 8 **Six-Roll Double Surfacers**, which will dress from $\frac{3}{8}$ to 8 inches thick and 30 inches wide.

No. 8½ is the same machine, made to dress 26 inches wide.

The Two First Top Rolls are each divided into two sections, and so arranged internally that although placed on a straight shaft, they have the same power to feed as a solid roll, whether used separate or together, and each section will yield independently, consequently will feed two boards of greatly varying thickness, at the same time, with perfect pressure on both. Rolls are $9\frac{1}{2}$ inches in diameter.

The Cylinders are made of steel. The spindles are $2\frac{1}{2}$ -inch diameter, and have long bearings. Pulleys on upper cylinder are double flanged, and are close to the boxes. Knives interchangeable on upper and lower cylinders.

The Lower Cylinder Boxes are three in number, and yoked together. Are adjustable for more or less cut. The outer box is next the pulley, and has special take up arrangement, should it wear faster than the others. The pressure bars may be simply lifted out for convenience in setting knives, and replaced without requiring adjustment.

The Upper Cylinder is double locked. Has divided chip-break and pressure rolls. The bed underneath is of steel, and may be easily removed for re-dressing, should it ever become necessary.

We use counter balanced binders for upper cylinder belts (which should be endless), thus making these machines the strongest belted of any on the market.

Has four rates of feed: 40, 60, 80 and 100 lineal feet per minute.

We furnish with each machine the knives on the cylinders and all necessary wrenches.

BELTING REQUIRED.

Two Endless Belts for Upper Cylinder, 21 feet, $7\frac{1}{2}$ inches, 6 inches wide.

Four Lower Cylinder, 26 feet, 6 inches wide.

For Feed, 18 feet 10 inches, 4 inches wide.

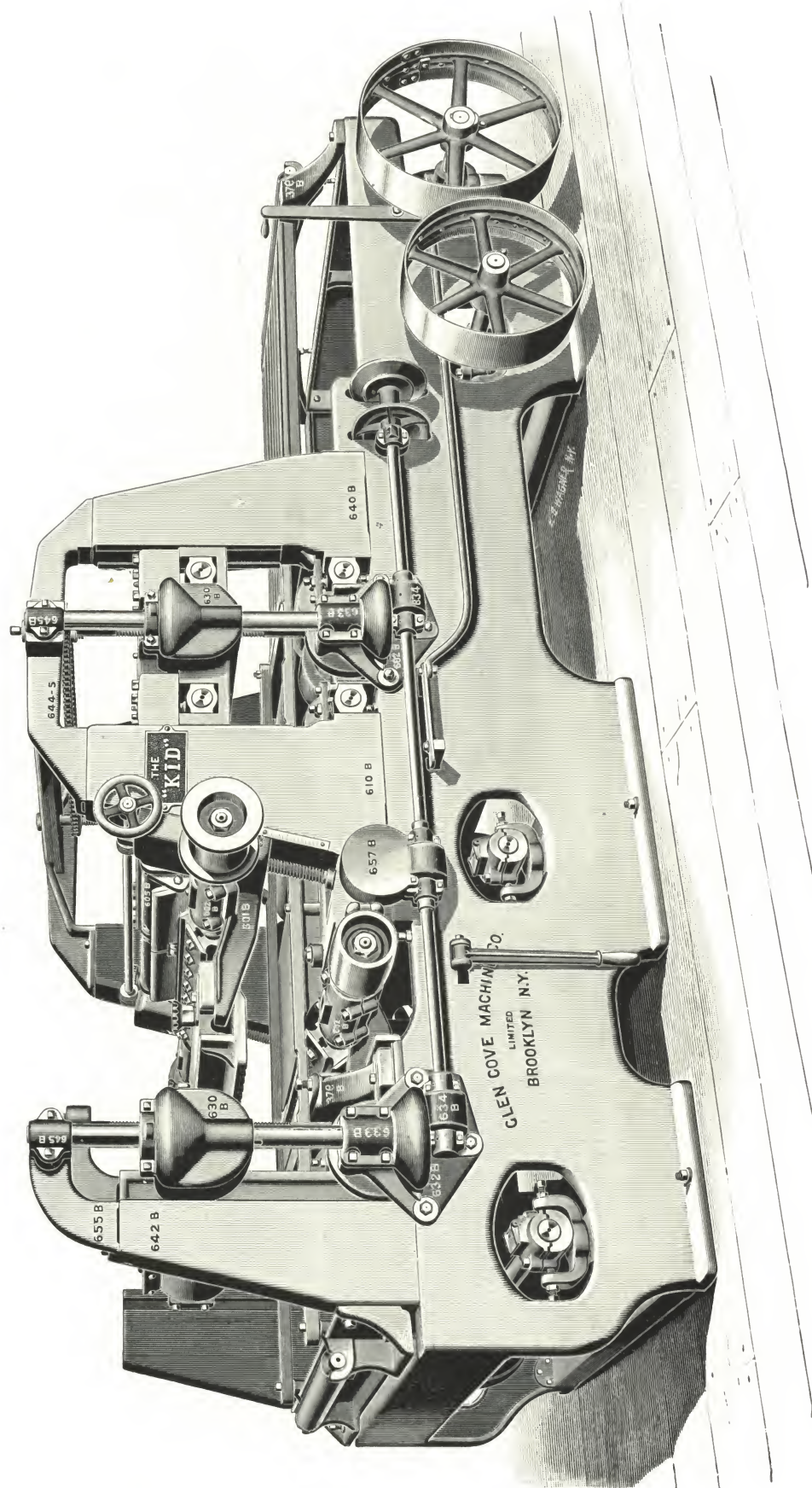
SIZE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 208—No. 8, Surfaces 30 x 8.....	16 x 10	900 to 1,000	11,000	Inscribe.
Fig. 209—No. 8½, Surfaces 26 x 8.....	16 x 10	900 to 1,000	10,400	Insect.

See Opposite Page for Description.

Fig. 210.

GLEN COVE MACHINE CO.'S

"Kid" Heavy Divided Roll Double Surfacers.



30 inches wide; 12 inches hoist; Six 10-inch Feed Rolls.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 210.

GLEN COVE MACHINE CO.'S

"Kid" Heavy Divided Roll Double Surfacacer.

THE cut on the opposite page represents the "Kid" Heavy Divided Roll Double Surfacacer, which will dress from $\frac{3}{8}$ -inch to 12 inches in thickness and up to 30 inches in width on two sides at one operation. The massive proportions of this machine, its strength, simplicity, and accessibility of all its parts, will attract the attention of every mill man. Its operation is controlled by two simple levers, without any additional bolts, jam nuts, etc. The entire hoist from $\frac{3}{8}$ -inch to 12 inches is accomplished in one minute.

The Lower Bed, cutter-head, etc., are stationary, while the upper head and rolls are raised and lowered by a single motion of the lever at the work side of the machine.

The Head and Rolls are each independent of the other in their adjustment for "lining up" and are connected with a single hoisting device for the quick adjustment of the machine for different thicknesses. By the arrangement of the patented rock-arm device, the frame, when lifted by either the hoist screws or the varying thickness of the lumber, all four corners rise with a parallel movement. The four sectional rolls work in slides and are controlled by springs to the extent of an inch before the frame can rise. Should an extra thick piece of timber pass through the machine, it will act only on the rolls driving it, and when those have gone their entire limit of independent action, the whole frame will rise with an increased pressure.

The action of one set of rolls does not interfere with the other set, as their pressure springs will keep them down to the bottom of the ways.

The Intermediate Shaft is driven by bevel gears secured in three good bearings, and with a key-way long enough to allow a bevel gear to slide up and down the requisite 12 inches. This shaft, which is 2 inches in diameter, makes but 38 revolutions to a feed of 100 feet per minute, and correspondingly less as the feed is decreased.

The Bevel Gear on this machine is of bronze metal, and has a long hub provided with a feather firmly dove-tailed through the entire length and is controlled by an extra box or bearing around the outside of this hub, which is grooved to prevent end wear and to guide it up or down the vertical shaft.

All these bevel gears are neatly housed in casings that completely exclude all dirt and shavings from their teeth and working surfaces. This driving mechanism does away with the expansion gears that, on so high a hoist, would occupy so much more space, and in other ways not be as efficient as the principle here adopted.

The bottom cutter-head yoke is so arranged that by loosening the heavy clamp bolts, it may easily be drawn out at either end of the machine, for access to the head and knives.

Circulars, giving further detailed information, will be mailed on application.

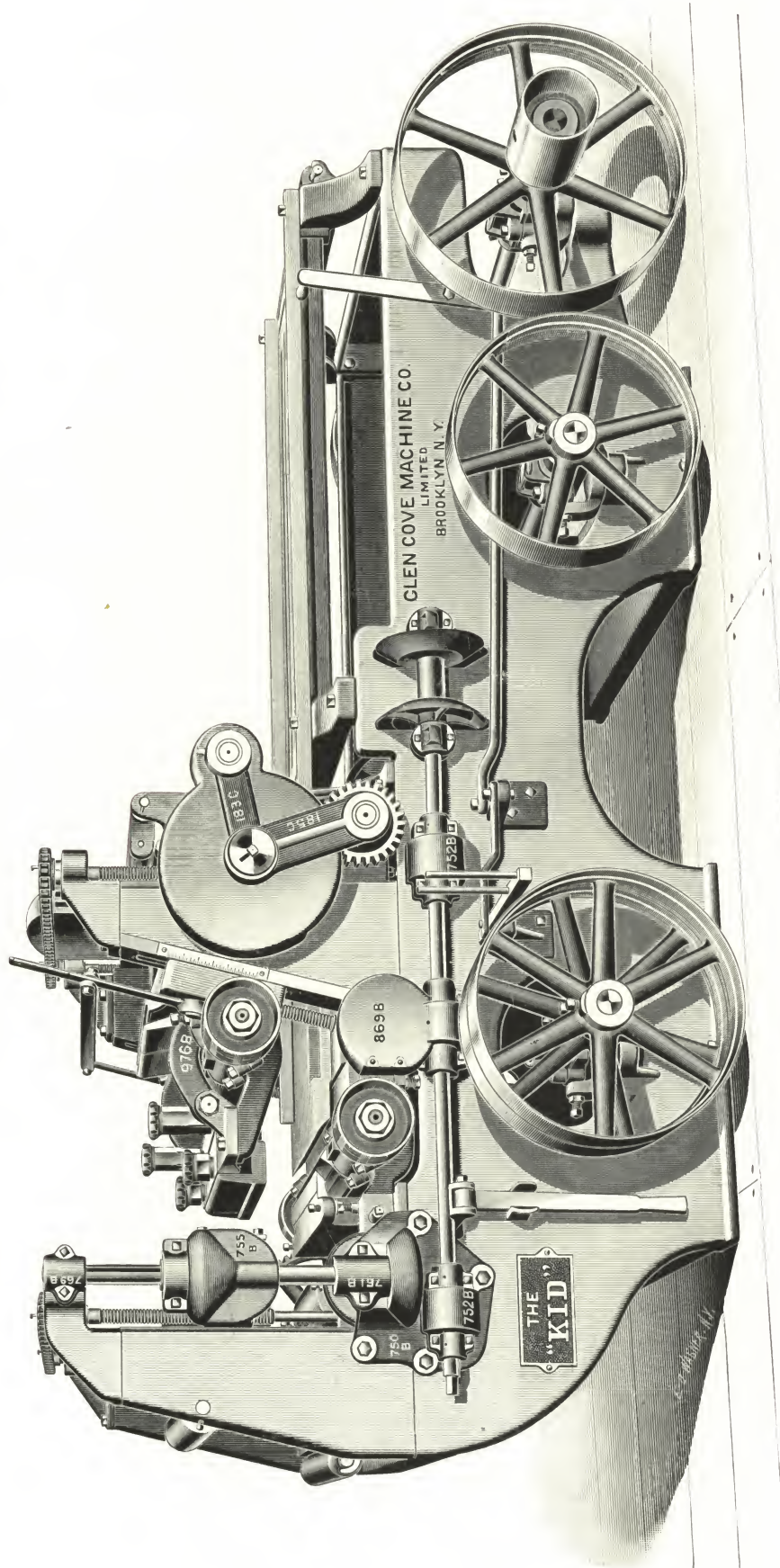
SIZE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 210—Double Surface 30 x 12.....	16 x 10	1,000	11,500	Insertion.

See Opposite Page for Description.

Fig. 211.

GLEN COVE MACHINE CO.'S

"Kid Jr." 26-inch Divided Roll Double Surfacers.



26 inches wide; 8 inches hoist; Four Feed Rolls.

Fig. 211.

GLEN COVE MACHINE CO.'S

"Kid Jr." 26-inch Divided Roll Double Surfacers.

THE cut on opposite page represents our Four-Roll, 26-inch, "Kid Jr." Surfacers. This machine meets the demand for a four-roll, rapid feed, double surfacer, which can do the finest work on hard wood.

It will double surface hard lumber from $\frac{1}{4}$ inch to 8 inches thick, and any width up to 26 inches. This is accomplished—

First.—By building the machine in such compact form that the carrying-in and carrying-out rolls are brought within 36 inches of each other, and

Second.—By constructing the entire machine of such strength and weight that it will double surface all kinds of lumber at as high speed as the operator shall desire. Where an extra rapid feeding machine is desired, as for box shooks, the broken roll is built in four sections, and the top head chip-breaker in eight. This facilitates the feeding of four narrow pieces of lumber through the machine at the same time.

The Broken Rolls are arranged in slides in a yoke casting, and each has an independent action, to the extent of one inch, backed up with spiral springs to give pressure on the lumber, and with the patented rock-arm device attached to each sectional roll to give a parallel motion. After one or more of the rolls has raised the inch limit allowed in these slides, it brings up against the yoke, which in turn has another allowance of one inch, under pressure of two more heavy spiral springs, giving in all two inches or more raise for the varying thickness of the lumber fed. By this arrangement the raising of one of the rolls does not interfere with the free action of the other one, or of the other three as the case may be. The yoke casting is also attached to the patented rock-arm device to prevent cramping in its action, and has also two long hoist screws attached to either end for adjustment.

Saving of Time being a matter of importance, a **Power Hoist** is applied to this machine, and is operated by a single lever at the work side. It will completely hoist or lower the entire upper works in one minute.

The Machine can also be adjusted and operated from the work side, without the assistance of a wrench, as the hand wheel and levers are all attached where it is necessary to use them.

By building this machine with the roll and roll supports entirely independent of the cutter heads, it will double surface lumber accurately, and will stand a gauge even after a long run. This principle is also applied to the bottom head and lower works, as they are supported directly to the solid frame, and consequently are not affected by any jar or vibration of the machine.

The bearings throughout the entire machine are all provided with grooves to allow a free circulation of oil, and have tubes leading to convenient places for the filling when necessary.

Circulars giving further detailed description will be furnished on application.

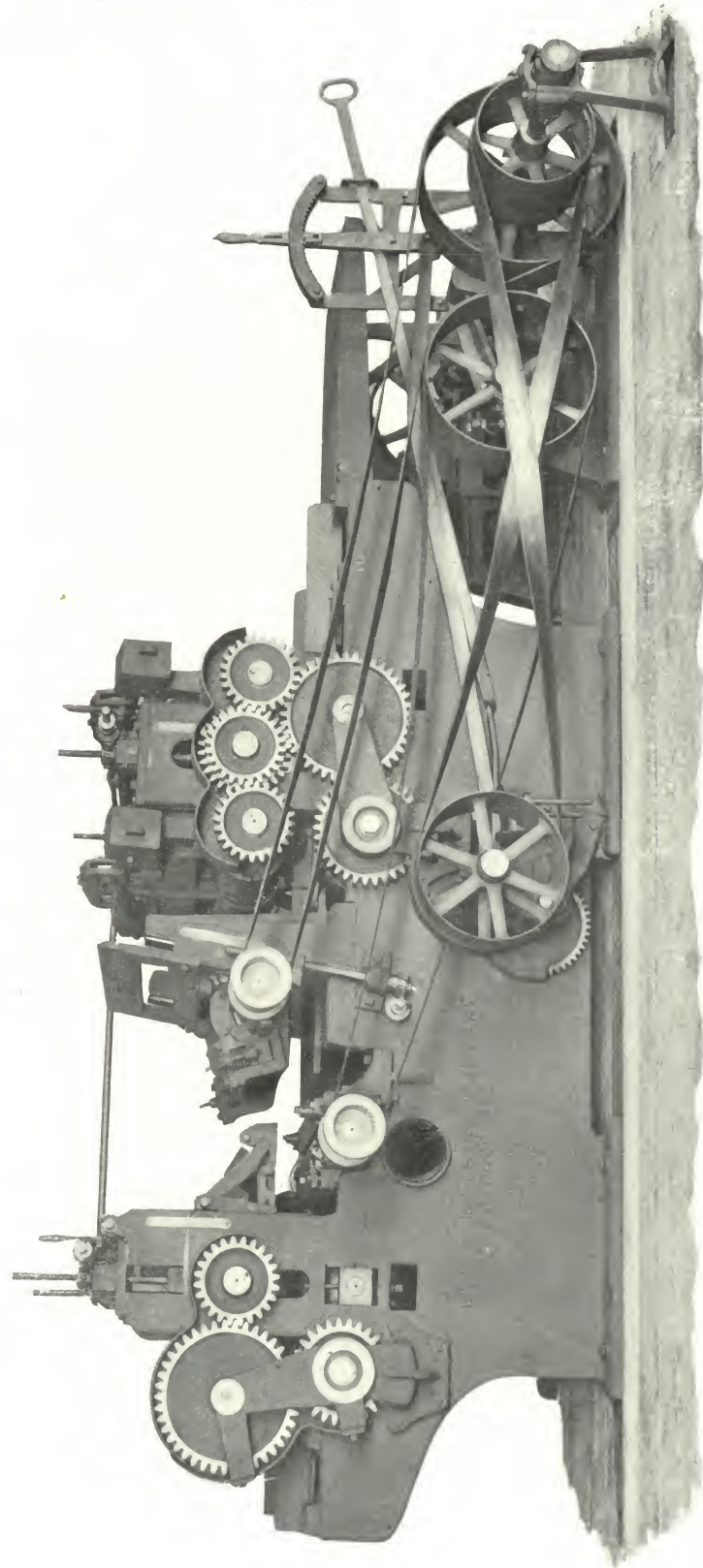
SIZE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 211—Double Surface 26 x 8.....	14 x 8	1,000	7,000	Insipid.

See Opposite Page for Description.

Fig. 212.

GLOBE MACHINE CO.'S

“Money Maker” Double Surfacers.



Built in Four Sizes, with Six Feed Rolls, to work 30 x 12, 30 x 8, 26 x 12 and 26 x 8.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 212.

GLOBE MACHINE CO.'S

"Money Maker" Double Surfacers.

THE In-Feeding Rolls are divided ; top rolls $8\frac{1}{2}$ inches in diameter, bottom rolls 10 inches in diameter. **The Top Rolls** have a parallel lift, thus giving the full friction surface of the rolls when in operation, an important feature that many machines do not possess.

The Chip-Breaker is divided into four sections, each section provided with an independent roll to assist the chip-breaker in raising and relieving the friction. The chip-breaker can be adjusted to $\frac{1}{8}$ -inch of the cut and swing on a radius with the head, insuring perfect work in heavy as well as light cuts.

The Cylinders are made from one solid piece of open hearth forged steel throughout and are four-sided, slotted or solid, as desired.

The Journals are $2\frac{1}{2}$ inches diameter and 11 inches long, both top and bottom and run in self-oiling boxes.

The Cylinder Pulleys are 5 inches in diameter and 7 inches long, double flanged and both top and bottom are double belted, and will carry 6-inch belts. The cylinder posts and bed plate are cast in one piece. The platen is bolted to the bed and is in two sections, and in case the platen wears, it can be removed for trueing up.

The Pressure Bar over bottom head can be thrown up out of position without loosening a nut or bolt and when thrown back is self-locking.

The Mouth Pieces or chip-breaker for bottom head are adjustable and easily removed for sharpening the knives. The counter shaft is detached from the machine.

The Main Counter-Shaft extends across the stands and is supported at each end by floor stands. The pulleys driving lower head are on short shafts or stubs and are adjustable for tightening the cylinder belts independently.

The Feed Pulleys on counter-shaft are in two sections and can be changed from slow to medium or fast in two minutes by loosening two set screws.

The main feed pulleys are on a swinging frame and make a tightener for the feed belt.

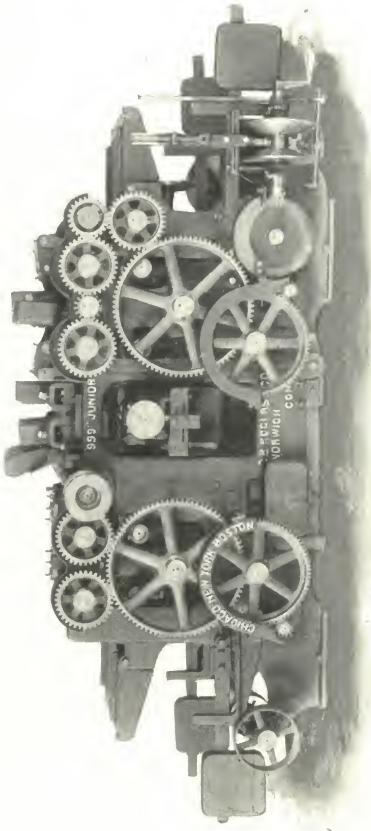
SIZE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 212 —Six Rolls, 30 x 12.....	14 x $10\frac{1}{2}$	850	{ 12,000 to 10,000 }	Insolate.
Fig. 212 A—Six Rolls, 30 x 8.....	14 x $10\frac{1}{2}$	850		Instate.
Fig. 212 B—Six Rolls, 26 x 12.....	14 x $10\frac{1}{2}$	850		Instep.
Fig. 212 C—Six Rolls, 26 x 8.....	14 x $10\frac{1}{2}$	850		Instinct.

See Opposite Page for Description.

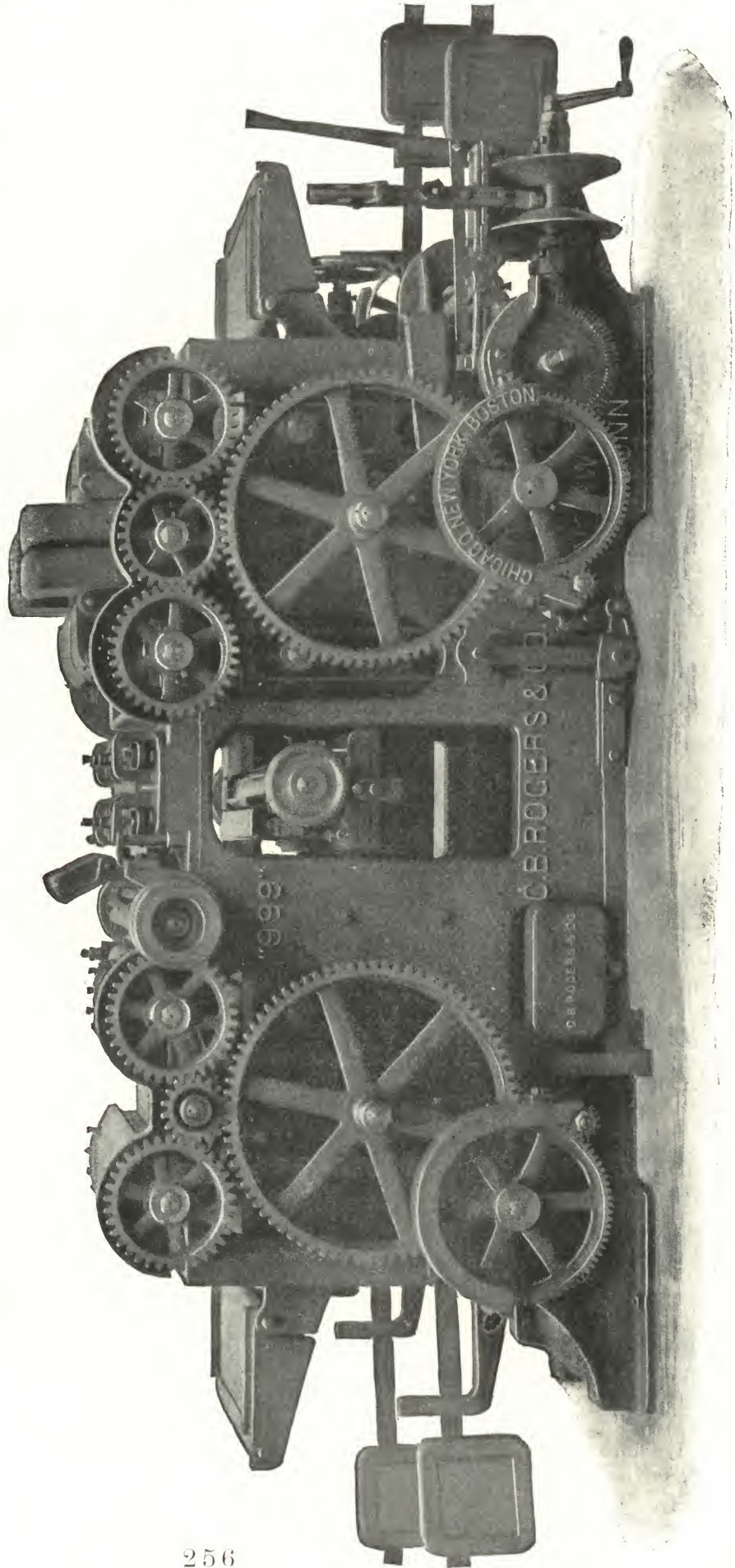
Figs. 213 and 214.

C. B. ROGERS & CO.'S

"999" and "999 Jr." Heavy Double Surfacers.



"999 Jr." Built in Two Sizes, to work 30 x 8 and 26 x 8.



"999" Heavy Double Surfacers. Built in Four Sizes, to work 30 x 12, 30 x 10, 26 x 12 and 26 x 10.

AMERICAN WOOD-WORKING MACHINE CO.

Figs. 213 and 214.

C. B. ROGERS & CO.'S

"999" and "999 Jr." Heavy Double Surfacers.

THE machines illustrated by the prints on the opposite page are of a type comparatively new, yet on the market long enough to have demonstrated fully their value. These machines are all built on the same general principle involving, first, the position of the cut of the lower head and, second, the arrangement and power of the feed. The demand for machines capable of dressing band sawed lumber satisfactorily necessitated the turning out of machines so arranged that the stock could be dressed on the lower head first; to do this, and make all the adjustments on the lower cylinder accessible, it was necessary to pull this head out to either side for easy access for setting and sharpening knives. This can be done with a little or no waste of time.

The Adjustments for the cut of this lower head are accomplished by the use of an auxiliary bed attached to and being a part of the main bed, but adjusted independent of it. This adjustment is made by means of a hand wheel at the feeding-in end of the machine, and operated just as the front table of a Buzz Planer is adjusted. This is entirely independent of the adjustments for thickness. The main bed for this purpose being raised and lowered by power friction device, raising the bed 8 inches in one minute.

Both Cylinders on these machines are very heavy, with large bearings in yoked boxes.

Chip-Breakers and Pressure Bars are all adjustable, and there is a flexible but ample pressure over the lower head. The feed of this machine is exceptionally strong. There are eight feed rolls, two pair of divided rolls before the cut and two pair of solid rolls after the cut of both heads.

While these machines are built to take stock up to 12 inches thick, the special value of the various adjustments given are best appreciated in shops where quantity and quality are important items in dressing the thinner classes of stock, as in sash and door factories, furniture factories, and general jobbing mills; quick changes and wide range both being prominent features.

The 999 is very heavy, and dresses 10 inches and 12 inches thick and 26 inches and 30 inches wide.

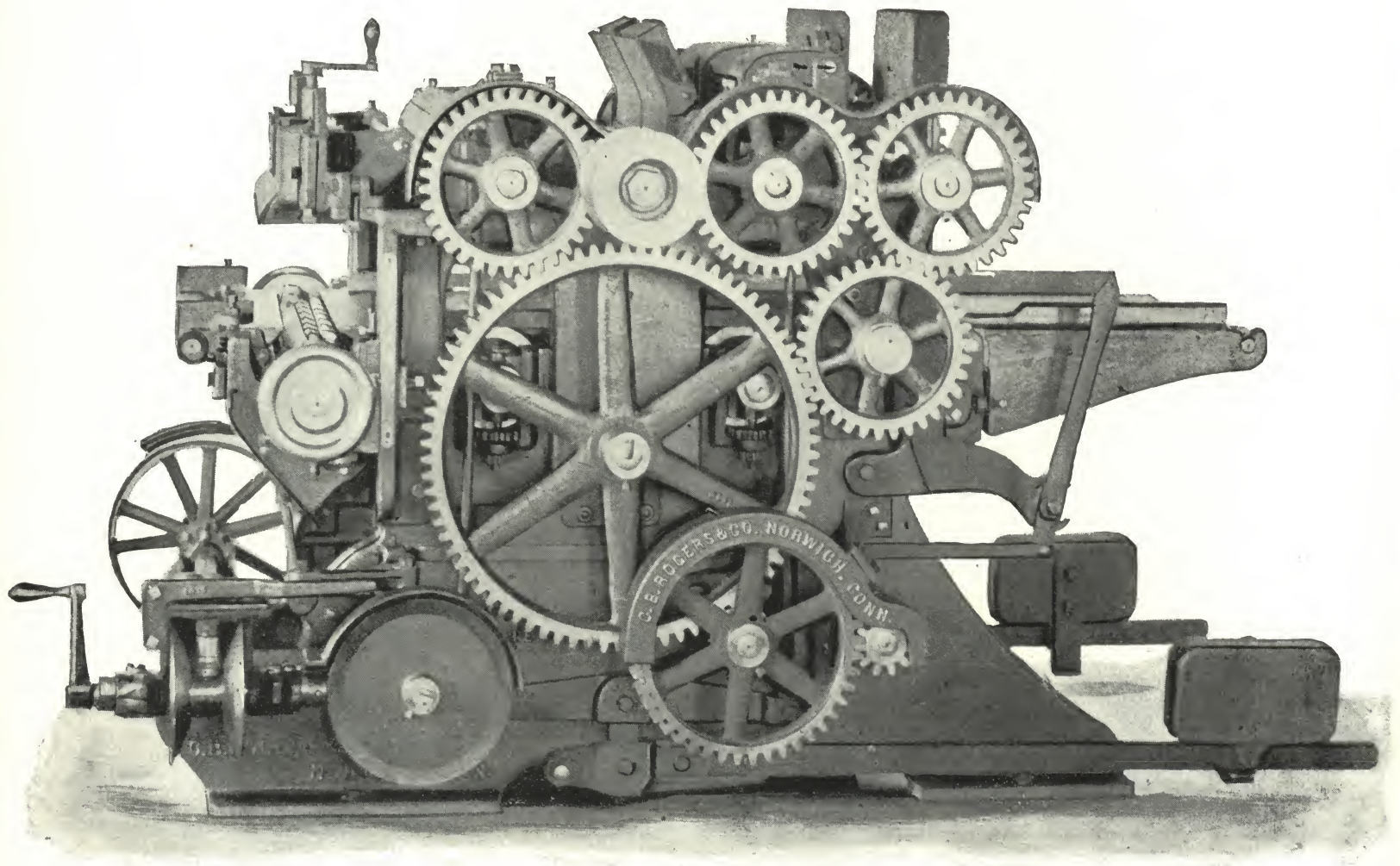
The Jr. is built on the same plan but considerably lighter, being a very heavy surfacer, weighing between 9,000 and 10,000 lbs. These machines work 26 inches and 30 inches wide, 8 inches thick.

SIZE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 213 —30 x 12, 999.....	14 x 8	1,000	12,500	Insular.
Fig. 213 A—30 x 10, 999.....	14 x 8	1,000	12,000	Insulter.
Fig. 213 B—26 x 12, 999.....	14 x 8	1,000	11,700	Intact.
Fig. 213 C—26 x 10, 999.....	14 x 8	1,000	11,200	Integer.
Fig. 214 —30 x 8, Jr.....	14 x 8	875	9,800	Intellect.
Fig. 214 A—26 x 8, Jr.....	14 x 8	875	9,300	Interim.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 215.

C. B. ROGERS & CO.'S Heavy Double Surfacers.



FRONT VIEW.

BUILT in two sizes with 4 or 6 solid or divided feeding-in rolls to work 30 x 10 and 26 x 10. This machine is built as either a Single or Double Surfacers of sizes as shown above, and in following types. As a **Six-Roll Machine** with either solid or divided feeding-in roll. The extra pair of rolls being placed beyond the lower cylinder and arranged to swing out to admit of easy access to lower head. As a four-roll machine with either solid or divided feeding-in roll.

Cylinders are large, slotted for three or four knives as desired, and run in heavy yoked boxes to insure perfect alignment.

Bonnet Chip-Breaker and pressure bars are all quickly and easily adjusted.

Lower Cylinder is readily set for any desired cut, and end of the bed swings down to admit of easy access to head for sharpening or setting knives.

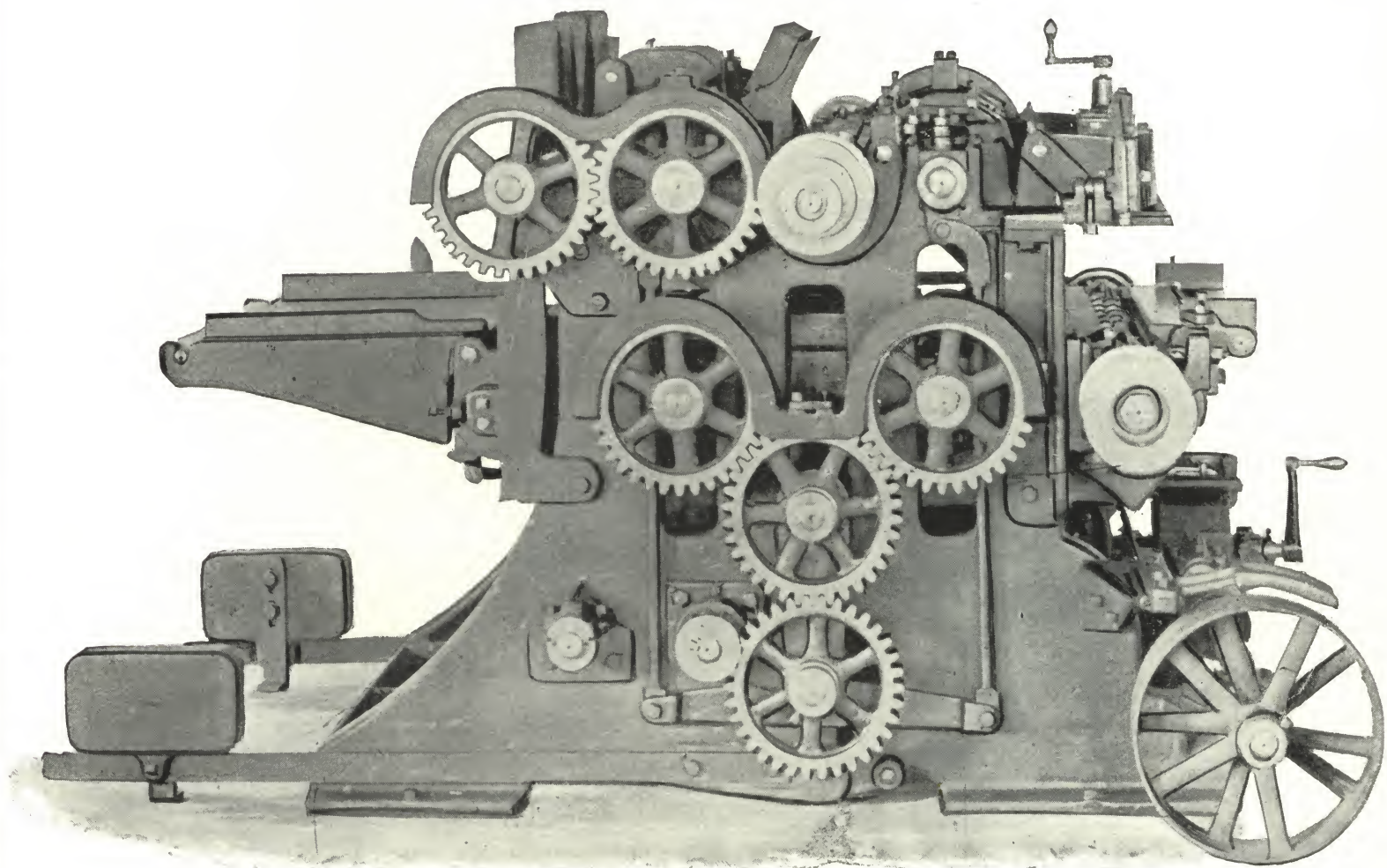
The Bed is raised and lowered on four screws by hand or power; when power is used an adjustment of eight inches is accomplished in one minute.

For rear views and further description, see next page.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 215.

C. B. ROGERS & CO.'S Heavy Double Surfacers.



REAR VIEW.

BUILT in two sizes with 4 or 6 solid or divided feeding-in rolls to work 30 x 10 and 26 x 10.

We would call particular attention to the fact that when set to proper thickness, the lower cylinder, while firmly attached to bed, is also clamped to the sides of the frame, insuring perfect solid support.

The Feed on this machine is very powerful, rolls being large and the gears on the rolls about twice as large in diameter, giving proper leverage. Each pair of **feed roll boxes** are connected in yoke form to avoid possibility of cramping, and all links are hung on boxes instead of on roll shafts.

Feed is driven direct from top cylinder through two feed shafts.

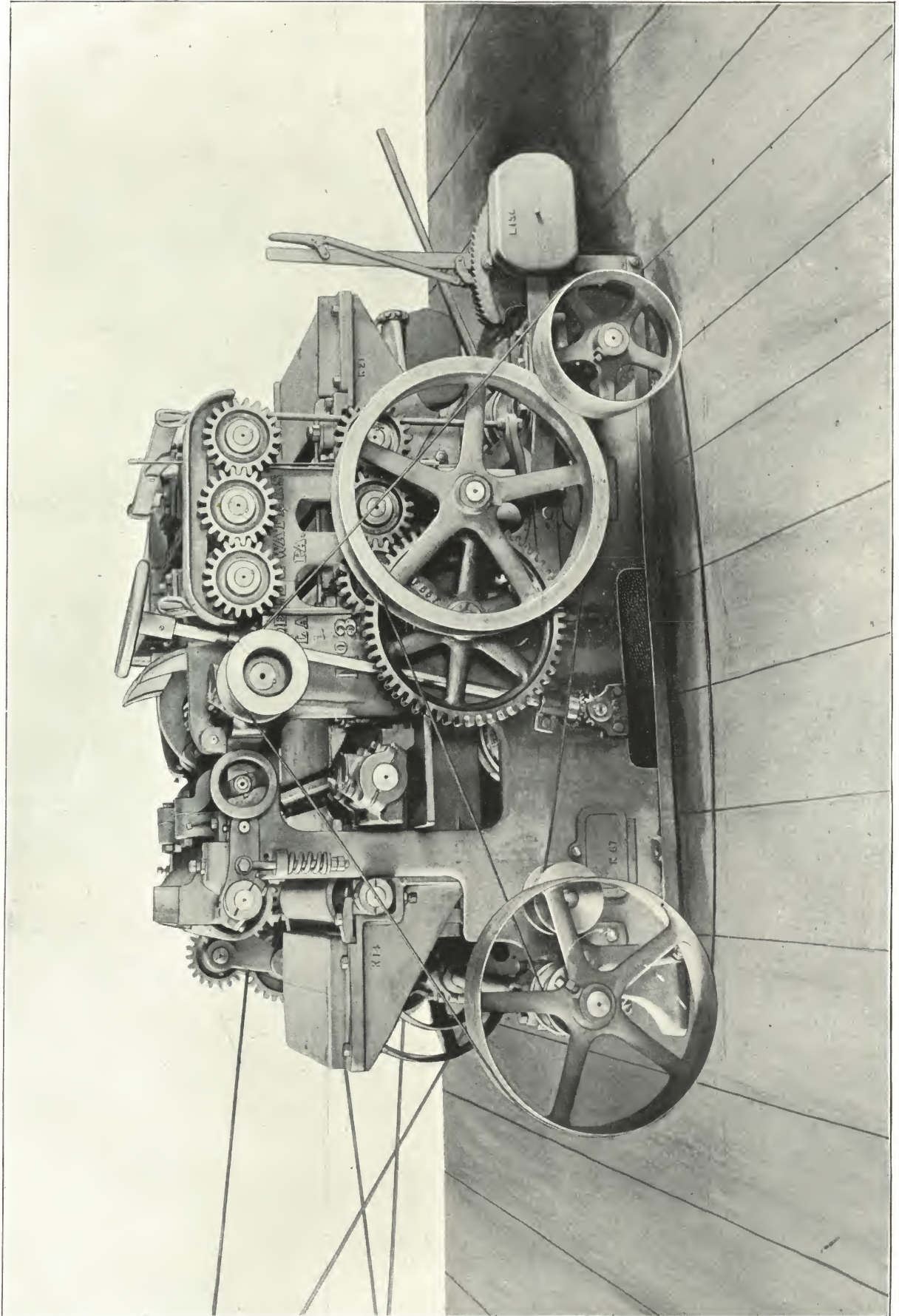
This machine is very heavy, thoroughly well made, and adapted to a full line of single and double surfacing on all kinds of lumber.

SIZE.	T. and I. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 215 —26 x 10, Solid Roll, Four Rolls.....	14 x 8	900	6,150	Interlope.
Fig. 215 A—30 x 10, " " " ".....	14 x 8	900	6,400	Interlude.
Fig. 215 B—26 x 10, Divided Roll, Four Rolls.....	14 x 8	900	6,200	Intermise.
Fig. 215 C—30 x 10, " " " ".....	14 x 8	900	6,450	Intermit.
Fig. 215 D—26 x 10, Solid Roll, Six Rolls.....	14 x 8	900	6,450	Intersect.
Fig. 215 E—30 x 10, " " " ".....	14 x 8	900	6,700	Interval.
Fig. 215 F—26 x 10, Divided Roll, Six Rolls.....	14 x 8	900	6,500	Intestate.
Fig. 215 G—30 x 10, " " " ".....	14 x 8	900	6,750	Intthal.

Fig. 216.

GOODELL & WATERS'

No. 3, Heavy Double Surfacers.



Six-Roll Lowering Bed, working 28 inches wide, 10 inches thick. Sectional Rolls and Pressure Bars, to admit two pieces of unequal thickness to be planed at one time.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 216.

GOODELL & WATERS'

No. 3, Six-Roll Double Surfacers.

NOTE this Comparison. In nearly all Double Surfacers, whether with lowering or stationary bed, the counter-shaft is at the in-feeding end of the machine, occupying the room necessary for the free movement of the operator; compelling him to stand near fast-running shafts and between fast-running pulleys and belts, and taking space which can be much better utilized for piling lumber and other purposes. In designing this machine, the counter-shaft has been placed at the out-feeding end, with the fast and loose pulleys located where the room is least desired.

The advantages of this arrangement are obvious, removing the counter-shaft from an objectionable position and allowing a radical change in the method of driving the upper cutter-head.

New Method of Belting. This is done by what is called a "Triangular" method of belting (Patent applied for). A sub-counter is placed near the in-feeding end, not extending beyond the machine.

The belt extends around the pulleys on the main countershaft, around the pulley on sub-counter, and over the upper cutter-head pulley. The strain of the belt is always down, and steady on the pulley.

It has been found a belt driven in this manner runs with less vibration and has much better adhesion to the cutter-head pulley than when attempted to run it around the pulley and immediately return it to the main counter-shaft.

Dividing the Cut. If a heavy cut is necessary, it can be divided between the upper and lower cutter-heads. The cut of the under head can be set instantly by merely turning a crank, which is within easy reach of the operator, raising or lowering the in-feeding table and lower rolls in the same manner as the table of a wedge jointer or buzz planer. Changing the cut of the lower head does not affect the thickness of the material when dressed, but divides the cut between the upper and lower heads.

In many instances this division of cut is a great advantage, as the full reduction may be made in passing the material through once, and better work will result than if the whole cut was required of the upper head.

Adjustments and Capacity. This machine is provided with sectional rolls and pressure bars to admit two pieces of unequal thickness at one time. It will double surface 28 inches wide up to 10 inches thick.

The bed is raised or lowered by power on four large screws. A lever within convenient reach operates this device. Slight changes of thickness can be made by hand.

Both heads are four-sided. The upper head is double belted. The under head is single belted.

The under head slides out for access to the cutters.

Principal Points of Merit. Removal of counter-shaft from objectionable position, giving free access to all parts of the machine. Dividing the cut between the upper and lower heads, which can be done accurately and very quickly without stopping the machine. Improved method of belting. Every part or piece of the machine has a number cast or stamped upon it so that by simply giving the number of the machine and number on part wanted, duplicates can be readily ordered by wire or mail.

BELTING REQUIRED.

Two Top Cylinder Belts, each 15 feet long, 5 inches wide.

One Under Cylinder Belt, 18 feet 6 inches long, 5 inches wide.

One Under Cylinder Countershaft Belt, 15 feet 6 inches long, 5½ inches wide.

One Tightener Feed Belt, 11 feet long, 3½ inches wide.

Two Raising Belts, each 7 feet 7 inches long, 2 inches wide.

Countershaft for Under Cylinder should be placed 6 feet from center of cylinder to center of countershaft (floor-line).

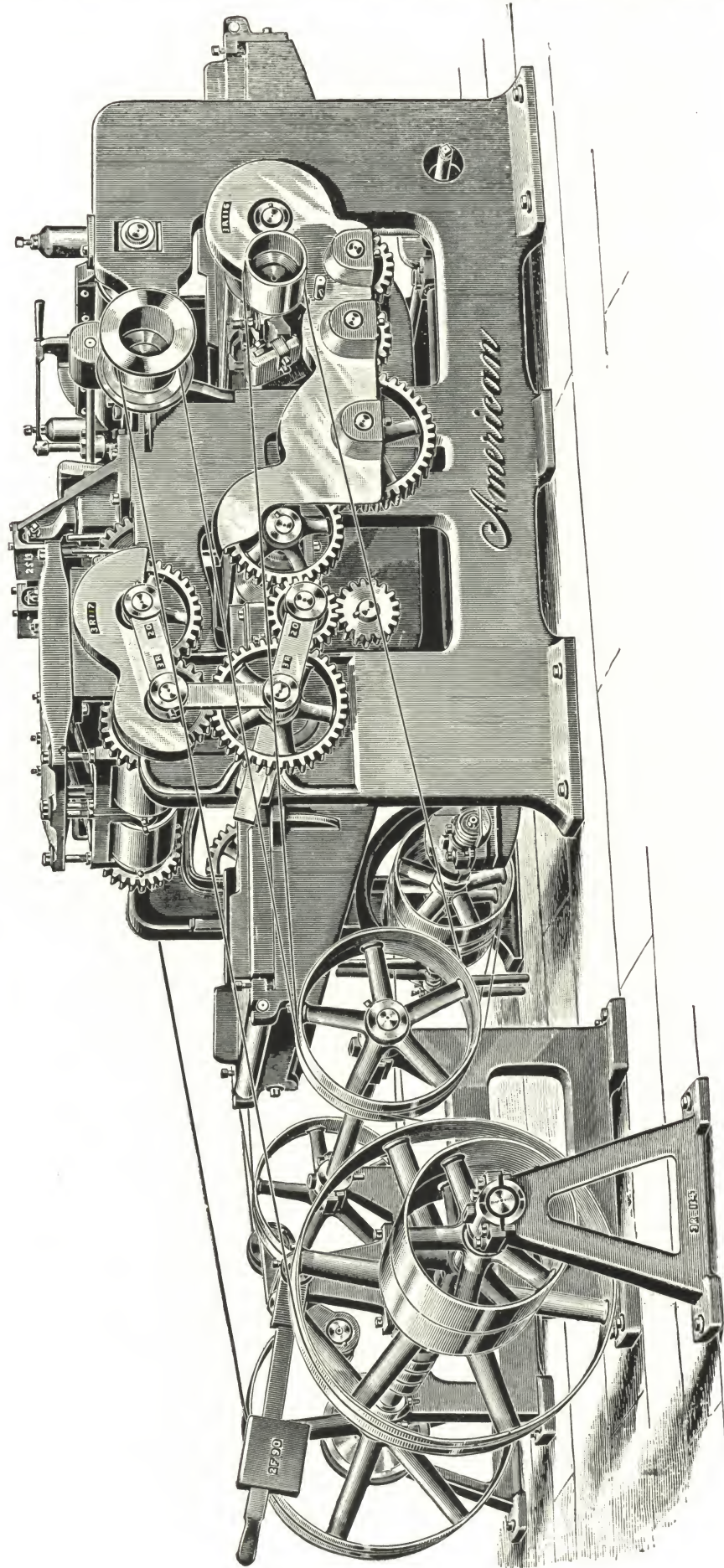
SIZE.	T. and L. Pulleys.	Revs. per Minute.	Weight	Code Word.
Fig. 216—Double Surface, 28 x 10.....	12 x 8	1,000	7,200	Intimate.

See Opposite Page for Description.

Fig. 217.

HOYT & BROTHER CO.'S

No. 14, Six-Roll Double Surfer.



The above machine has Six Feed Rolls, and will Double Surface 30 X 12.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 217.

HOYT & BROTHER CO.'S

No. 14, Six-Roll Double Surfacers.

ON the opposite page we illustrate our new No. 14 Surfacers. It will dress from $\frac{1}{4}$ inch to 12 inches thick and 30 inches wide.

We use what we call **pony rolls** to hold the lumber firmly to the bed, also to lift the chip-breakers so they will not stall on heavy cuts. These pony rolls, the chip-breakers and the first two feed rolls are broken so that two boards of greatly varying thicknesses can be fed at the same time and have perfect pressure on each.

Although intended for a planing mill surfacer, it will dress quite short stuff, as the chip-breakers and pressure bars lie very close to the cylinders. This fact, together with the close proximity of the cylinders, enables one to do very fine work at a rapid feed. It is almost impossible to chip either surface at either end.

The Cylinders are of steel, and carry four knives each, which are interchangeable. They are both double belted onto pulleys of extra large diameter, so no hesitancy should be caused by extra heavy cuts. The journals are $2\frac{1}{2}$ inches in diameter on upper head, and $2\frac{1}{4}$ inches on lower head.

The Lower Head can be drawn out one side for setting or sharpening knives. The pressure bars can be simply lifted out and replaced without further adjustment.

The Table may be raised or lowered by hand or power. The bed underneath upper cylinder is of steel and may be easily removed for re-dressing should it ever become necessary.

The patented expansion gearing is of very superior design, and is connected both inside and outside by links or straps, so that crowding apart is impossible. We employ one set for each top roll instead of driving all top rolls with one set, as many do.

We use **elliptical spring** pressure applied to each broken section of the feed rolls, so the operation of one section has no effect on the pressure of the other. This, together with our weighted feed belt tightener, makes the feed exceedingly strong.

Our Split Feed Pulleys are very quickly changed, the tightener making the employment of more than one belt unnecessary.

The counter-shafts may be so arranged as to drive from overhead if desired.

There are three rates of discharge, 40, 60 and 80 lineal feet per minute.

BELTING REQUIRED.

For Upper Cylinder, 42 feet of 5-inch.

For Lower Cylinder, 31 feet of 5-inch.

For Feed, 17 feet 4 inches of 4-inch.

For Raising and Lowering, 20 feet 2 inches of 3-inch.

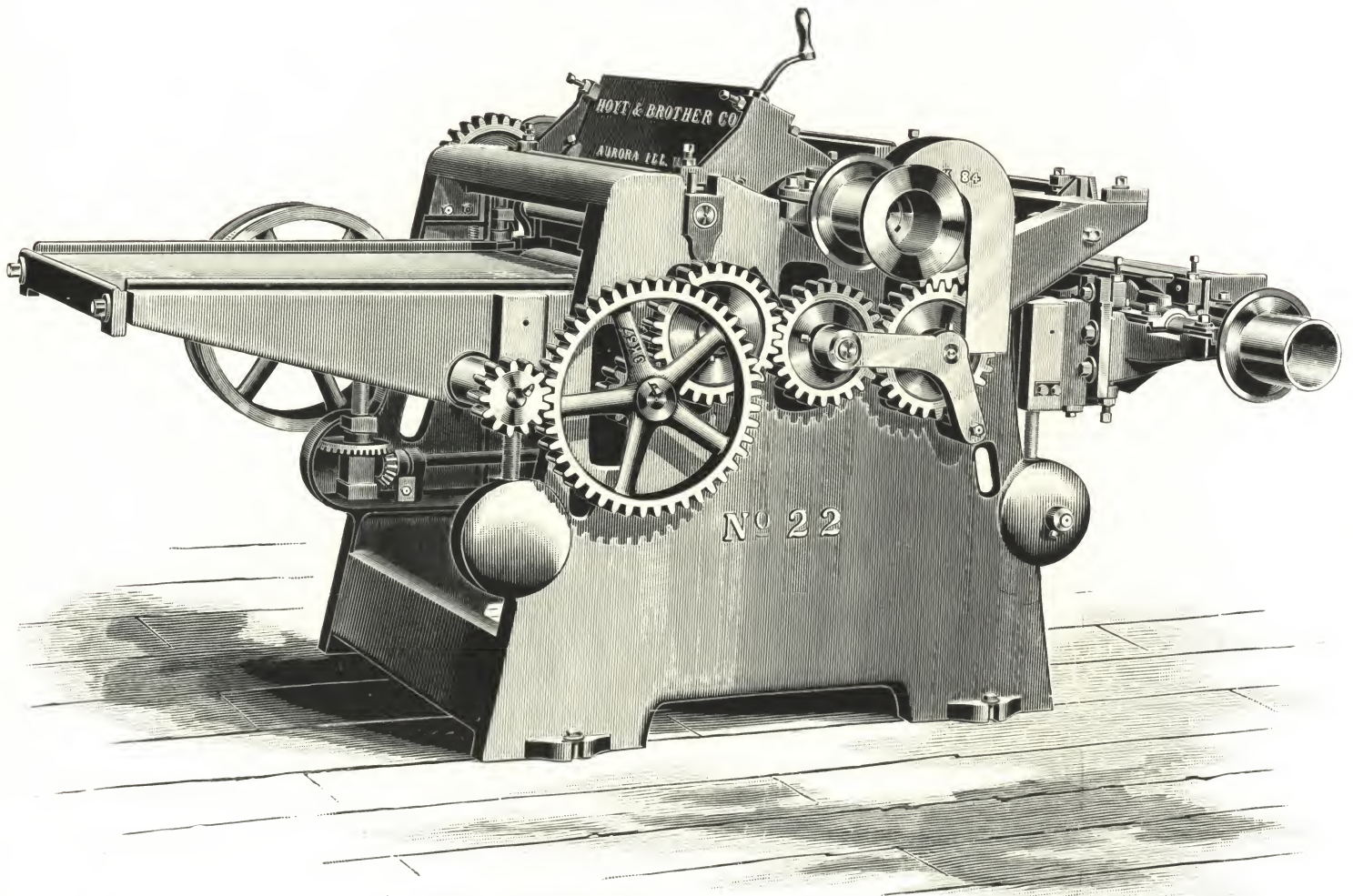
SIZE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 217—No. 14, Double Surface 30 x 12.....	14 x 10	850	9,400	Intonso.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 218.

HOYT & BROTHER CO.'S

No. 22, New Roller Surfacers.



WE illustrate above our **New Surfacers**, made as far as possible from the same patterns as our **No. 22 Matcher**. This machine is entirely new in design, and is in all ways at the head, in its class. It will surface 24 inches wide, and $\frac{3}{8}$ to 6 inches thick.

The Table is supported on four screws, all operated at the same time and with one motion. It has four rolls 5 inches in diameter, strongly geared together. The first **Top Roll** is fluted. It is a strong and powerful feeder. **The Cylinders** are made of steel. **The Spindles** are drawn out from the body of forgings, and are 2 inches in diameter, with long bearings. **Genuine Babbit Metal** is used where high motion is required, on all of our machines. **The Heads** carry two knives. **The Top Cylinder** is double belted.

The Chip-Breaker and Pressure Bar beside the **Top Cylinder** are placed very close to the cut, thus insuring nice work. **The Chip-Breaker** has a support on the boxes that carry the first top feed roll, and is held in line one-quarter inch below the bottom line of the roll. This eases the entrance of the lumber, and makes it almost impossible to stick or stall the machine.

The Under Cylinder is placed outside the second pair of rolls, or at the rear end of the machine. When access is wanted to it, there are two nuts to loosen, swing the caps away, turn back the bed over the cylinder, take out one or both of the pressure bars, and it is entirely exposed.

We send with each machine the knives on the cylinders, and all necessary wrenches.

This surfacer is built both as a **Double and Single Cylinder Machine**. It has three changes of feed, namely, 30, 40 and 50 lineal feet per minute.

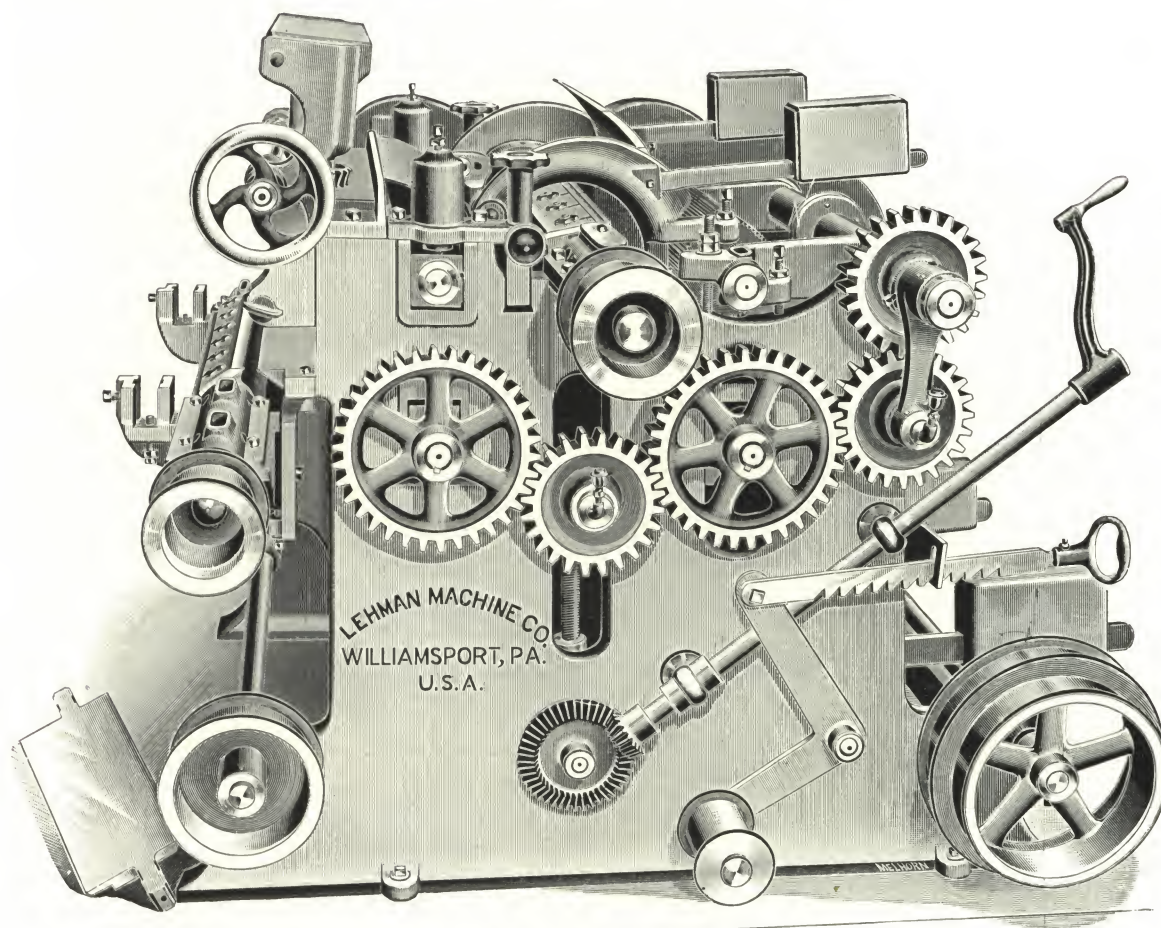
Belting Required: Two for **Top Cylinder**, each 17 feet, 9 inches, 5 inches wide; one for **Bottom Cylinder**, 22 feet, 2 inches, 4 inches wide; one for **Feed**, 13 feet, 1 inch, 4 inches wide.

SIZE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 218 —Double Surface, 24 x 6	14 x 7	1,000	3,900	Intrepid.
Fig. 218 A—Single Surface, 24 x 6	14 x 7	900	3,000	Intricate.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 219.

LEHMAN MACHINE CO.'S Improved Cabinet Surfacers.



ABOVE we illustrate our improved 26-inch Double Surfacers. It is recommended as being a substantial and complete machine for working a perfectly smooth surface on either hard or soft wood.

The Cutter Heads are solid forged steel. **The Top Head** is four sides slotted, and driven by two belts; the under head is two sides slotted, and driven by one belt.

The Journals are of extra large diameter and long bearings. Both **Upper** and **Lower Cylinders** have lips made in such a manner that the knives hug them firmly, thereby relieving the chips and allowing very smooth work to be done.

There are **two pressures**—one on each side of the cylinder. The front pressure bar or chip-breaker is adjustable to or from the cylinder to insure smooth working on either hard or soft wood, and so arranged that if forced up by a heavy cut it will not come in contact with the knives; or it may be swung clear of the cylinder for sharpening or setting the knives.

The Pressure Bar over under cylinder is adjustable and hinged to the frame, so that it may be swung up out of the way for sharpening or adjusting the knives.

We build this machine with our improved hinged sectional pressure bars and broken feed rolls, and we claim them as being the most perfect mechanism of this kind ever produced for the surfacing of two unevenly sawed boards at the same time.

The Four Feed Rolls are 6 inches in diameter and are driven by the most powerful as well as the most perfect feeding device ever applied to a machine of this kind. The machine will work from 1-16 to 10 inches in thickness. There are two rates of feed, 40 and 60 feet per minute. The back or feeding out roll receives its pressure from large steel springs. The shaving hood is so arranged as to prevent any shavings from getting under the smooth rolls and marking the lumber.

The machine has the latest improved mode of putting the rolls in the bed, doing away with the loose plates in front and back of rolls, making the bed one hundred per cent. stronger than the old way. The bed is dovetailed to the frames and so arranged with the gibs that any wear resulting from raising and lowering the bed can be taken up, which is of great importance.

The machine is built with two or four raising screws, as desired.

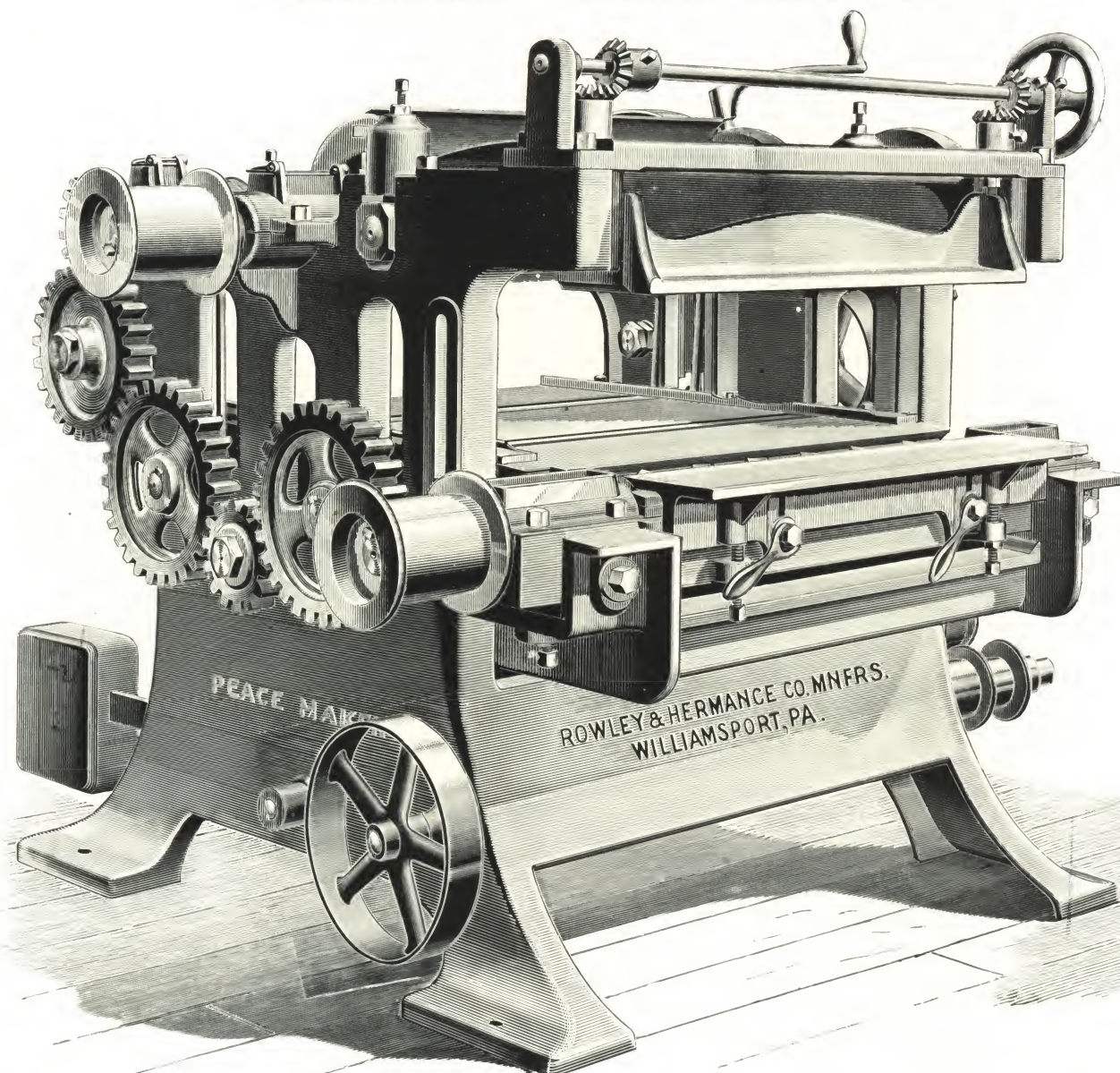
The machine is so constructed that clipping the ends of stock is entirely prevented.

SIZE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 219 —Double Surface, 30 x 10 Sectional Roll.....	12 x 8	900	4,500	Intrigue.
Fig. 219 A—Single Surface, 30 x 10 Sectional Roll.....	12 x 8	900	4,100	Intrinsic.
Fig. 219 B—Double Surface, 26 x 10 Sectional Roll.....	12 x 8	900	4,200	Introduce.
Fig. 219 C—Single Surface, 26 x 10 Sectional Roll.....	12 x 8	900	3,850	Intrude.
Fig. 219 D—Double Surface, 24 x 10 Sectional Roll.....	12 x 8	900	4,000	Intwine.
Fig. 219 E—Single Surface, 24 x 10 Sectional Roll.....	12 x 8	900	3,600	Inundate.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 220.

ROWLEY & HERMANCE CO.'S "Peacemaker" Double Surfacers.



THE engraving shows our **New Double Surfacers**, which is a heavy, strong and compact machine, designed for doing smooth and rapid work, for use in planing mills, jobbing shops, furniture factories, etc., etc. It will plane from $\frac{1}{8}$ of an inch to 8 inches thick and 26 inches wide. The top and bottom heads are made of solid forged steel with long bearings of large diameter, and the top head is belted at both ends. The bed is very rigid, solidly ribbed under the cylinder and gibbed in the slides to take up lost motion, and by our new device can be quickly and securely clamped to the frame, making it as solid as the frame itself.

The **Chip-Breaker** and **Pressure Bar** are carefully fitted. The **Chip-Breaker** rises and falls with the in-feeding roll. Both work close to the knives and are adjustable to the lumber independent of each other and the feed rolls.

The **Feed Works** are very strong and the gearing extra heavy. The rolls are set as close to the cylinder as possible and are all driven. The **Gears** are made from **Iron Cut Patterns**, and all adjustable gears are bushed with brass, and travel together so as to be uniform mesh and not rise on the points of the teeth, making a very positive and powerful feed.

The **Upper In-Feeding Roll** is fluted and weighted, and adjustable for light or heavy cut; and being connected with our **Improved Compensating Weight Levers**, equal pressure is secured on the lumber the entire width of the machine.

This machine is furnished either with sectional or solid in-feeding rolls and chip-breakers, as ordered. The feed is started or stopped by belt tightener placed convenient to the operator. The under head is adjustable for variation of cut, and is easy of access. The **Pressure Bar** over the Under Head raises and lowers by hand wheel, either end of it, however, can be raised or lowered independently. It has two rates of feed: 45 and 64 lineal feet per minute. We build this planer either double or single, as required.

	SIZE.	Tight and Loose Pulleys.	Revs. per Minute.	Cubic Measurement.	Approximate Weight.	Average H. P. Required.	Code Word.
Fig. 220	—26-inch Double Surfacers, with Sectional In-Feeding Roll and Counter-Shaft	10 x 8	900	112	3,500	3 to 8	Inure.
Fig. 220 A	—26-inch Double Surfacers, with Solid In-Feeding Roll and Counter-shaft.	10 x 8	900	112	3,300	3 to 8	Invader.

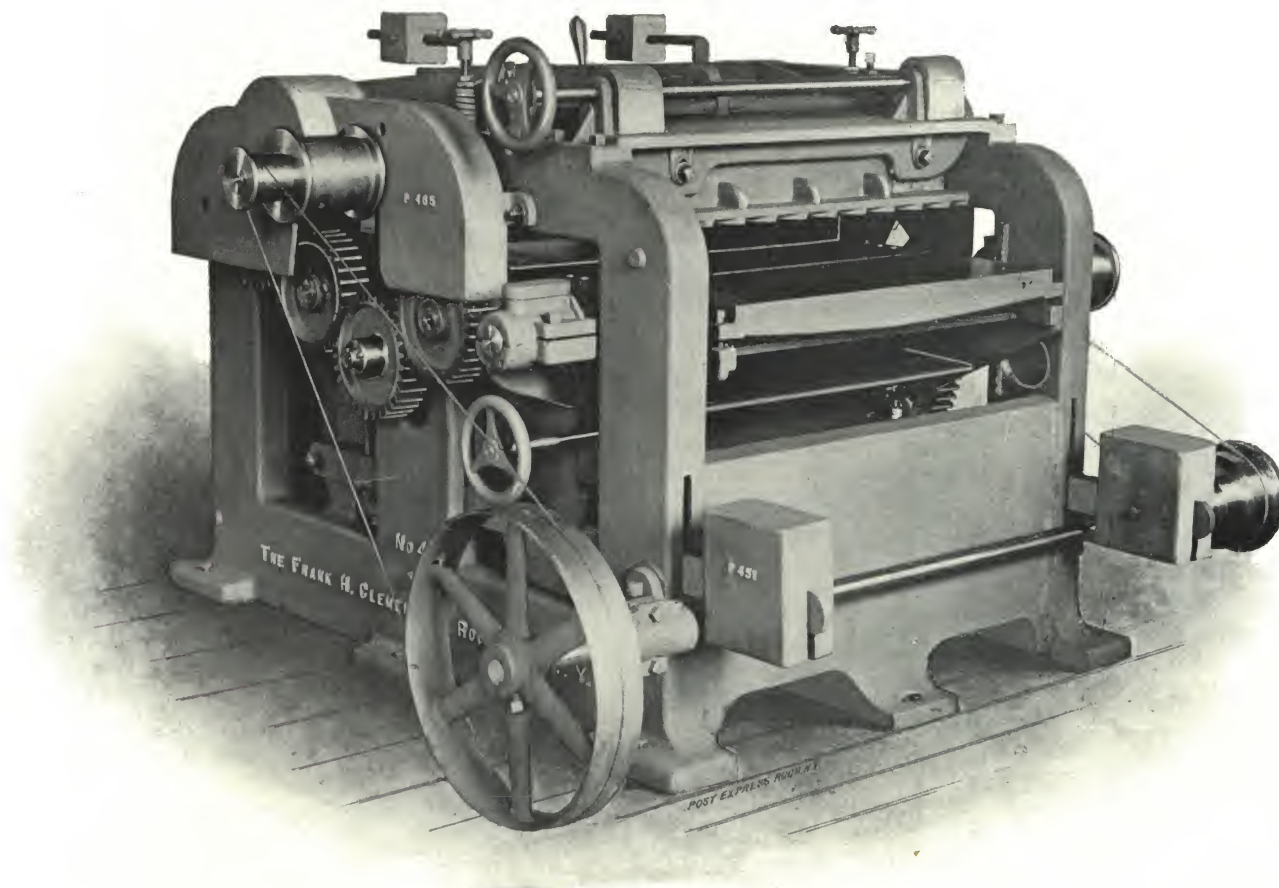
(Single Surfacers, see page 275).

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 221.

F. H. CLEMENT CO.'S

No. 4, Heavy Double Surface Planer.



THIS is the same machine in all essential particulars as our No. 4 Single Surfacers, and is an extra heavy and finely fitted machine in all details.

The Main Bed is raised and lowered on long inclines, and the under cylinder and its attachments are made vertically adjustable upon it just behind the rear feed rolls. This adjustment is effected by means of screws with miter-gears, and a cross shaft with hand wheel outside of the framing.

The Lower Cylinder is a solid steel forging provided with two knives, and the bearings are unusually long and very carefully ground (not filed) and the boxes are scraped to them, so the machine will start off in close boxes without heating.

The Pressure Bed is also adjustable by two screws, with gears and connecting cross-shaft, so that it is always retained exactly parallel to the main bed.

The Delivery Plate is adjustable to the cut, independently of the cylinder adjustment, and by taking out two screws it can be removed entirely, giving easy access to the knives.

The Divided Feed Roll and bonnet can be supplied, when ordered, at an additional price.

Two Counter-Shafts are furnished, one of which is located directly in the rear of the machine to drive the lower cylinder. The main counter can be over the machine or below the floor, as desired. The range of thickness is from $\frac{1}{8}$ inch to 7 inch.

SIZE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 221 —Double Surface, 36 x 7	12 x 8 $\frac{1}{4}$	850	6,200	Invalid.
Fig. 221 A—Divided Roll and Bonnet, extra .....	.....	.....	.....	Invective.
Fig. 221 B—Double Surface, 30 x 7	12 x 8 $\frac{1}{4}$	850	5,700	Inveigh.
Fig. 221 C—Divided Roll and Bonnet, extra .....	.....	.....	.....	Inventor.
Fig. 221 D—Double Surface, 27 x 7	12 x 8 $\frac{1}{4}$	850	5,400	Inverse.
Fig. 221 E—Divided Roll and Bonnet, extra .....	.....	.....	.....	Invest.
Fig. 221 F—Double Surface, 24 x 7	12 x 8 $\frac{1}{4}$	850	5,000	Invite.
Fig. 221 G—Divided Roll and Bonnet, extra .....	.....	.....	.....	Involve.

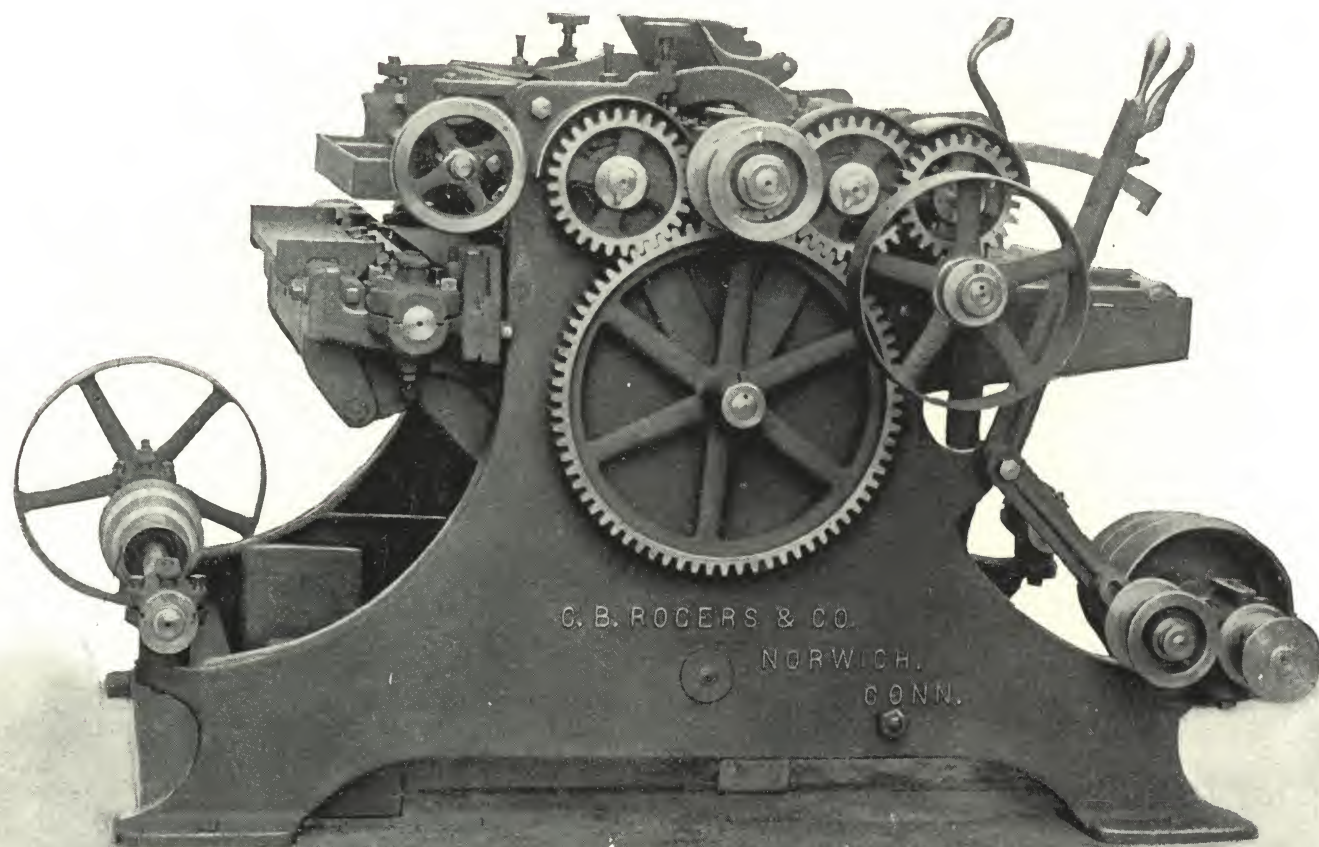
(Single Surfacers, see page 272.)

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 222.

C. B. ROGERS & CO.'S

No. 12, Double Surfacers.



NO. 12 DOUBLE SURFACER, to work 24 inches wide and up to 6 inches thick. This machine is a very substantial one, an excellent tool for general shop purposes, has good **strong frame**, well spread out at the base, **cylinders babbited** in heavy **boxes** and the **lower cylinder boxes yoked**, upper ones practically yoked as they are a part of the frame itself. **Cylinders** are good size, made for either three or four knives and slotted, upper one belted both ends. **The pressure bars and chip-breakers** are all adjustable and pressure bar over lower cylinder and toe piece at the end of the machine swing off to admit of easy access in setting and sharpening lower knives.

The Feed is strong, all four rolls being driven and geared back to cause but slight strain on the feed belt, feed being stopped and started by tightener and supplied with three changes of feed by means of cone feed pulleys. **Cones** are well separated to give good belt power. This machine weighs 3,100 pounds, is furnished with two countershafts, one for the top cylinder and a short one for driving the lower cylinder which must be placed on the floor about six feet between centers.

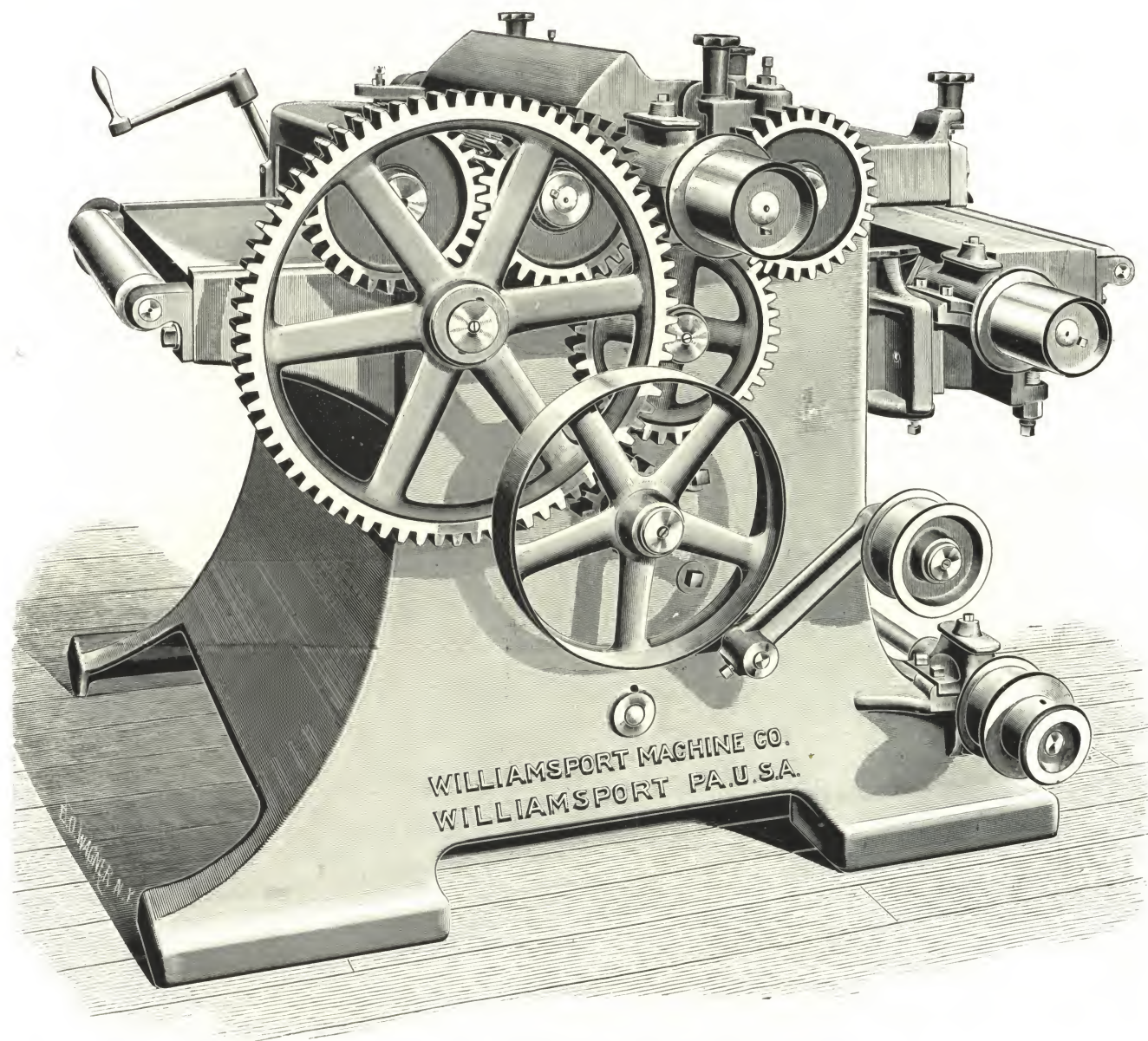
SIZE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 222—Double Surface, 24 x 6	12 x 6	900	3,100	Inwrap.
(Single Surfacers, see page 276.)				

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 223.

WILLIAMSPORT MACHINE CO.'S

No. 4, Double Surfacers.



FINDING a demand for a planer heavier and with stronger feed than our small planers, we have placed upon the market the No. 4 Surfacers, which is faithfully represented in the cut above. This planer, in weight and strength, comes between the Pony Planers and the heavy "Williamsport" Surfacers. This machine weighs about 2,800 pounds and the frame is in one solid casting.

Top Cylinder is belted at both ends. There are two changes of feed and a tightener on feed belt; also adjusting crank and attachment for stopping the feed, handy to the operator.

The Front Roll is weighted and connected with rockshaft, making the feed rolls raise parallel at all times. This will be found a great improvement over the old way of weighting feed rolls. Improved pressure bar and chip-breaker are provided, and the heads are of solid forged steel.

Gearing is very strong, belts well proportioned, and bearings of unusual length.

The Table is gibbed to the main frame, and is provided with loose gib for taking up the wear, thus preventing the planer from clipping ends.

No expense has been spared to make this planer a standard on the market. We also build it as a Single Surfacers.

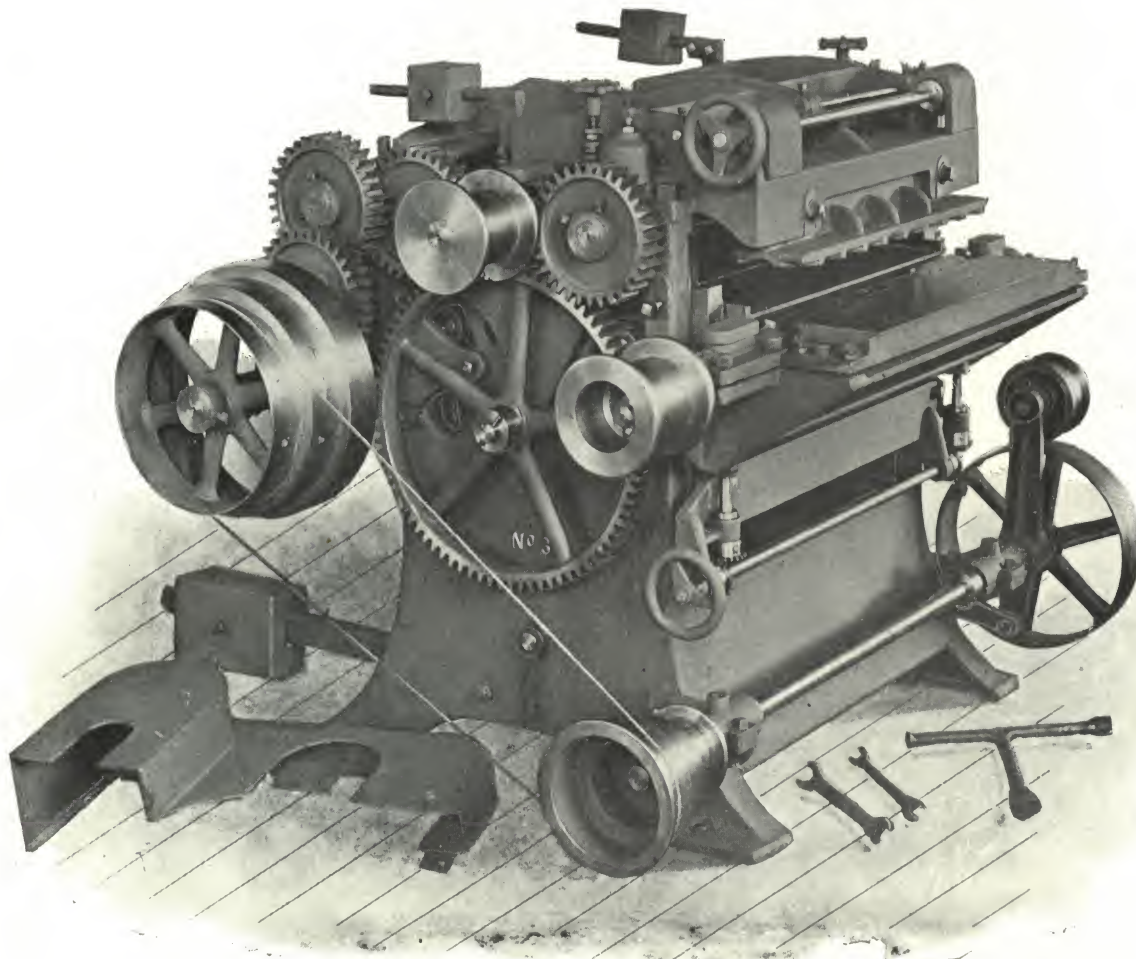
SIZE.	T. and L. Pulleys.	Revs. per Minute.	Floor Space Required.	Average H. P. Required.	Weight.	Code Word.
Fig. 223—Double Surfacers, 24 x 8	12 x 6	900	58 x 56 inches	7	2,800	Jabega.
(Single Surfacers, see page 278.)						

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 224.

F. H. CLEMENT CO.'S

No. 3, Double Surface Planer.



With or Without Divided Feed Roll and Bonnet.

THIS machine is our No. 3 Double Belted Surfacer, with the addition of the lower cylinder and a special counter-shaft for driving it.

The Cylinders are solid steel forgings, with capping lips, and the journals are 2 inches and $1\frac{3}{4}$ inches diameter respectively, very carefully fitted and boxes scraped to them. The box caps are planed into recesses to avoid side motion. The upper cylinder is driven from both ends.

The Feed Works are especially strong and well arranged, and all adjustable gears travel together so as to be in uniform mesh at all times, a feature not found in other machines.

The Forward Feed Roll is geared at both ends so that there is equal pressure on the lumber for its whole length, the pressure being obtained from levers and weights in the most approved manner.

The Pressure Bars are carefully arranged and fitted, and when working hang about $2\frac{1}{2}$ inches apart; thus, pieces 4 inches long may be planed smoothly without dubbing the ends. Both bars are adjustable to the lumber independently of the rolls.

The Feed Rolls are set close to the cylinder and arranged to hold the lumber hard down on the bed. The upper in-feed roll is usually fluted but may be smooth when so ordered. All rolls are geared and driven, and the feed is very strong, being taken directly from the cylinder, and made variable by cone pulleys; the range of feed can be from 15 to 60 feet per minute.

The Lower Cylinder is driven by an independent counter-shaft, whereby the cylinder need not run when not in use.

The Pressure Plate is adjustable by a hand wheel and cross shaft and is attached to a rigid casting securely bolted to the frame of the machine.

The Lower Cylinder Yoke is also adjustable vertically by a hand wheel, gears and cross shaft, and the delivery bed may be easily set for any depth of cut, and detached to get access to the knives by removing two screws.

All Materials and fittings are first-class, and we test every machine on various kinds of work before shipping.

Broken or Divided Feed Roll and chip-breaker are furnished when ordered at a reasonable extra price.

	SIZE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 224	—Double Surface, 36 x 7.....	12 x 8 $\frac{1}{4}$	850	4,600	Jabler.
Fig. 224 A	—Divided Roll and Bonnet, extra				Jabuco.
Fig. 224 B	—Double Surface, 30 x 7.....	12 x 8 $\frac{1}{4}$	825	4,200	Jacara.
Fig. 224 C	—Divided Roll and Bonnet, extra				Jacinto.
Fig. 224 D	—Double Surface, 26 x 7.....	12 x 8 $\frac{1}{4}$	800	3,850	Jackal.
Fig. 224 E	—Divided Roll and Bonnet, extra				Jacket.

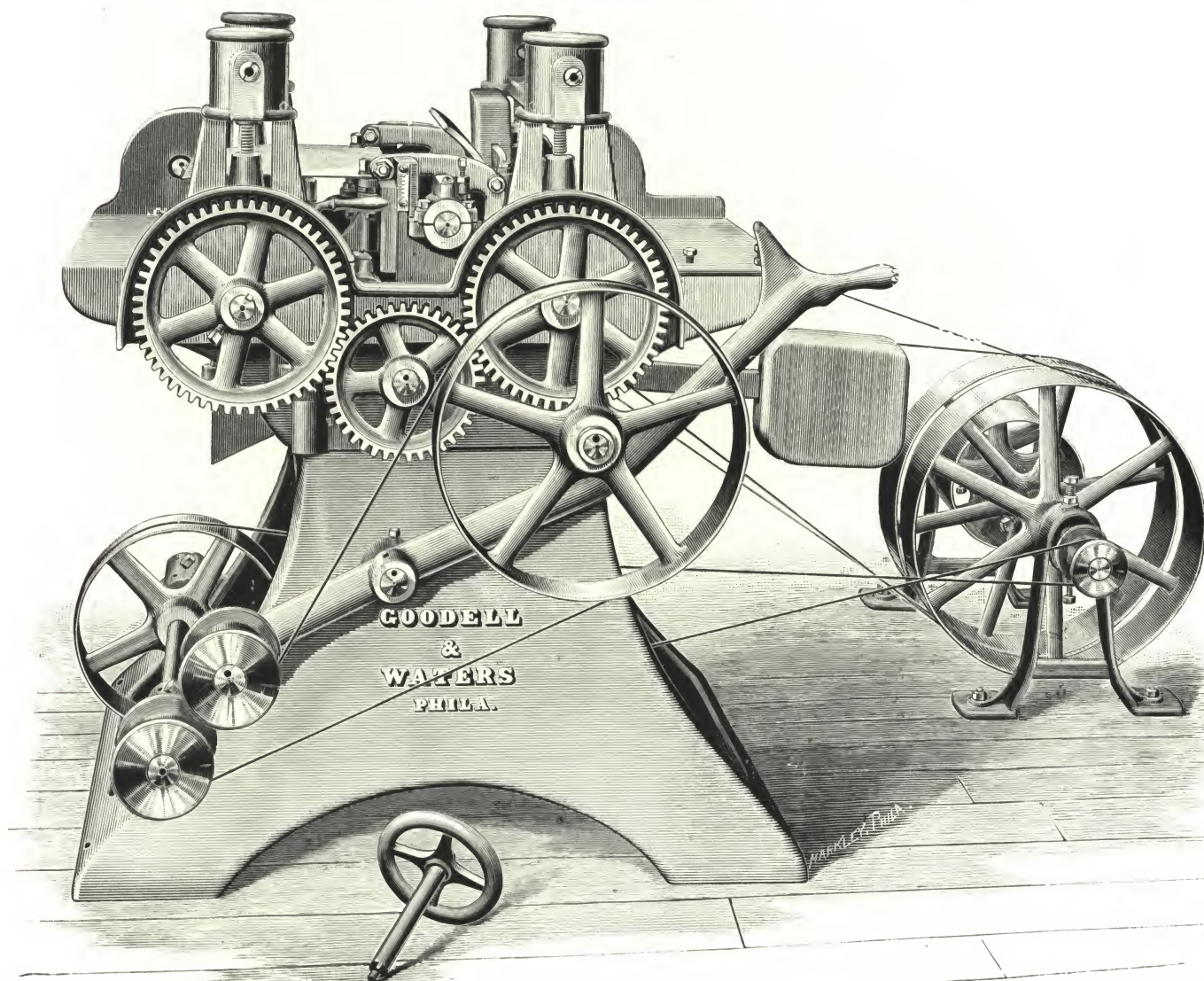
(Single Surfacers, see page 272.)

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 225.

GOODELL & WATERS'

Double Surface Cigar Box and Panel Planer.



THIS Machine is designed especially for surfacing cigar box stuff, panels, furniture and cabinet stock, and all kinds of hard and soft wood.

It will surface 16 inches wide and $1\frac{1}{2}$ inch thick, and as thin as one-thirty-second of an inch in a very superior manner. It is fitted with the latest improved adjustable pressure bars.

The out-feeding end of the machine may be swung either to the right or left entirely clear of the under cylinder, leaving easy access to file and set the knives and adjust the pressure bars. When counter-shaft is on the floor, it should set six feet from centre of top cylinder.

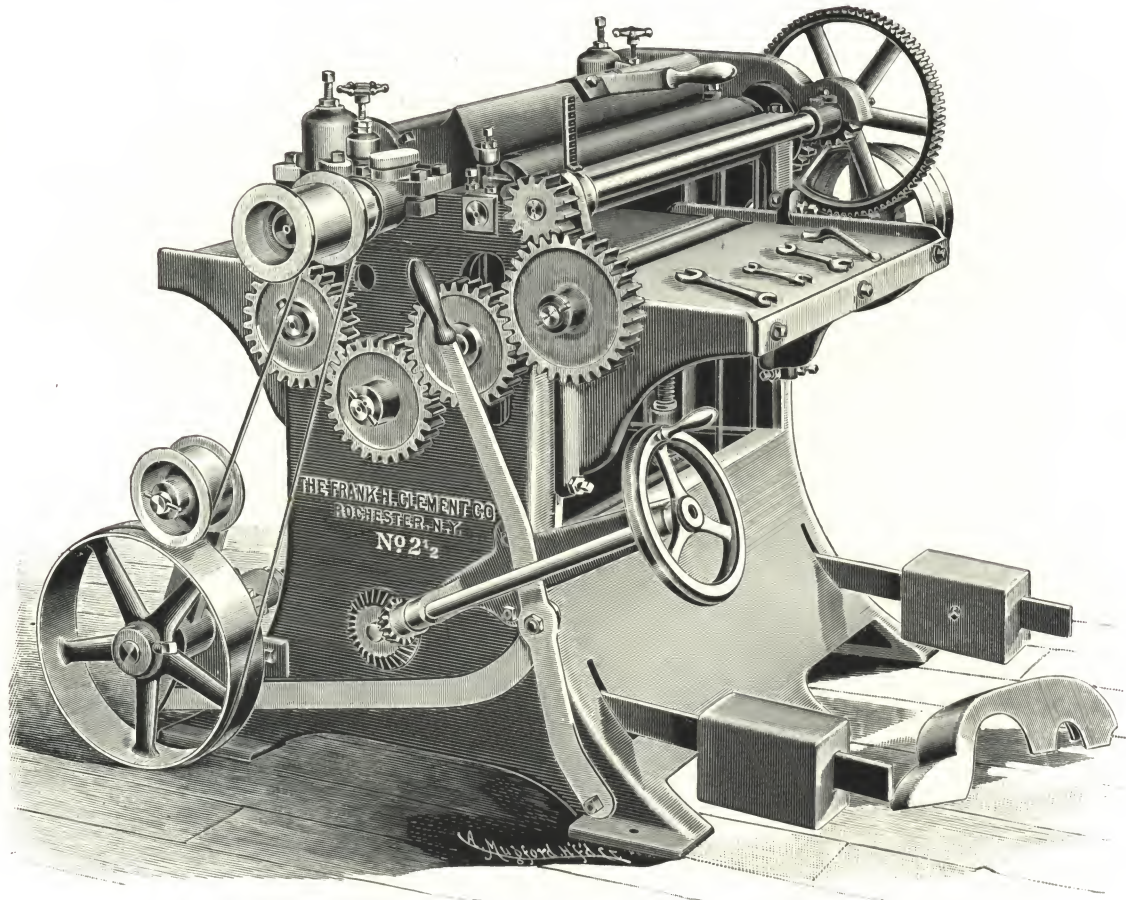
SIZE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 225—Double Surface, 16 x $1\frac{1}{2}$	10 x 6	1,100	1,500	Jacobin.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 228.

F. H. CLEMENT CO.'S

No. 2½ Double Belted Surfacers, Improved.



THE engraving shows a new and fine design for a **Single Surface Planer**, made with special reference to doing smooth and fast work, for casket, furniture, carriage, sleigh, chair, fine door and panel work, etc., and embodying many new and valuable features.

The Frame is unusually rigid and heavy, and it has three points of bearing on the floor. By this means it cannot be strained or twisted, either by bolting down or settling of the floor, and the cylinder boxes can be kept screwed down close on the journals when running at a high speed, without heating, thus avoiding wavy work.

The Bed is very rigid, the web being 10 inches deep and solidly ribbed under the cylinder, and it has six points of support on the frame with gibs to take up lost motion, so that vibration under the cut is entirely avoided, and also dubbing the ends. The bed plate is separate and can be easily removed for replanning.

The Cylinder is a solid steel forging, with bearings 1¾ inches diameter, and 8 inches long, and is very carefully fitted and balanced, special pains being taken to have the journals round, by careful grinding and polishing (not filing), and bearings carefully scraped to them. The box-caps are planed into recesses to prevent vibration sideways, and have large oil cups.

The Feed Works are particularly strong and well arranged, and the gearing is extra heavy. All adjustable gears travel together so as to be in uniform mesh and not ride on the points of the teeth, a weak spot in nearly every other machine.

The Pressure Bars are carefully arranged and fitted, and pieces 4 inches long, or even less, can be planed smooth, without dubbing the ends. The forward pressure bar rises and falls with the in-feed roll. Both bars work very close to the knives and are both adjustable to the lumber, independently of each other and the feed rolls.

The Feed Rolls are set as close to the cylinder as possible and arranged to hold the board down firmly to the bed. The upper in-feed roll is fluted, and pressure is obtained by weighted lever in the most approved form. Every detail has received careful attention, and the fitting is done by experienced mechanics. All machines are belted up and tested before shipping.

The Cylinder is double belted, and the feed works are driven from it by means of a tightener and cone pulleys. All the rolls are geared together and driven, making a very strong and uniform feed. This pattern of planer makes a very satisfactory general machine for hard or soft wood for medium work.

Counter-Shaft is included unless otherwise ordered, and is provided with our "Perfect" self-oiling loose pulley.

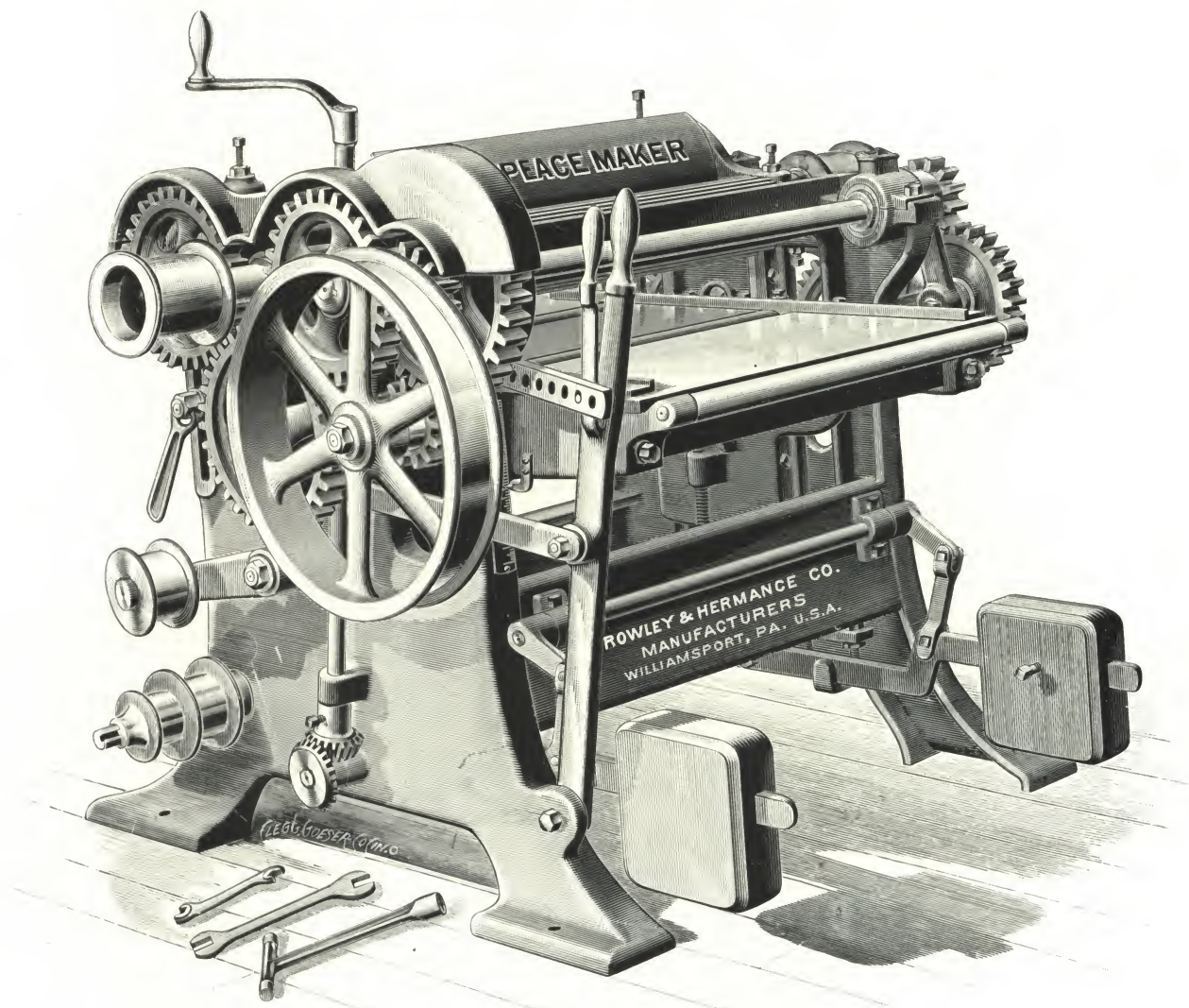
SIZE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 228 —Single Surface, 24 x 7.....	10 x 6¼	800	2,250	Javelin.
Fig. 228 A—Single Surface, 20 x 7.....	10 x 6¼	800	2,000	Jealous.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 229.

ROWLEY & HERMANCE CO.'S

"Peacemaker" Double Belted Single Surfacers.



THIS cut illustrates our **New Double Belted Single Surfacers**, to plane from $\frac{1}{8}$ of an inch to 8 inches thick and 26 inches wide. It is a heavy, strong and compact machine of new design, for doing smooth and rapid work in planing mills, jobbing shops, casket, furniture and carriage factories, etc., and has many new and valuable features.

The Cylinder is made of solid forged steel, with long bearings of large diameter, and belted at both ends.

The Bearings are carefully fitted and the boxes scraped to them.

The Bed is very rigid, solidly ribbed under the cylinder and gibbed in the slides to take up lost motion, and by our new device can be quickly and securely clamped to the frame, making it as solid as the frame itself.

The Chip-Breaker and Pressure Bars are carefully and accurately fitted. The chip-breaker rises and falls with the in-feeding roll. Both the chip-breaker and pressure bar work close to the knives and are adjustable to the lumber independent of each other and the feed rolls.

The Feed Works are very strong and the gearing extra heavy.

The Rolls are set as close to the cylinder as possible, and are all driven.

The Upper In-Feeding Roll, which is a fluted roll, is weighted; and being connected with our improved compensating weight levers, equal pressure is secured on the lumber the entire width of the machine.

This machine is furnished either with sectional or solid in-feeding rolls and chip-breakers, as ordered.

The Gears are made from iron cut patterns, and all adjustable gears are bushed with brass, and travel together, so as to be in uniform mesh and not ride on the points of the teeth, making a very positive and powerful feed.

The feed is started and stopped by a belt tightener placed convenient to the operator. It has two rates of feed: 45 and 64 lineal feet per minute. We build this machine either single or double, as required.

SIZE.	Tight and Loose Pulleys.	Revs. per Minute.	Cubic Measurement.	Approximate Weight.	Average H. P. Required.	Code Word.
Fig. 229 —26-inch Single Surfacers, with sectional in-feeding roll and counter-shaft.....	10 x 8	900	88	2,900	2 to 6	Jerk.
Fig. 229 A—26-inch Single Surfacers, with solid in-feeding roll and counter-shaft.....	10 x 8	900	88	2,700	2 to 6	Jester.

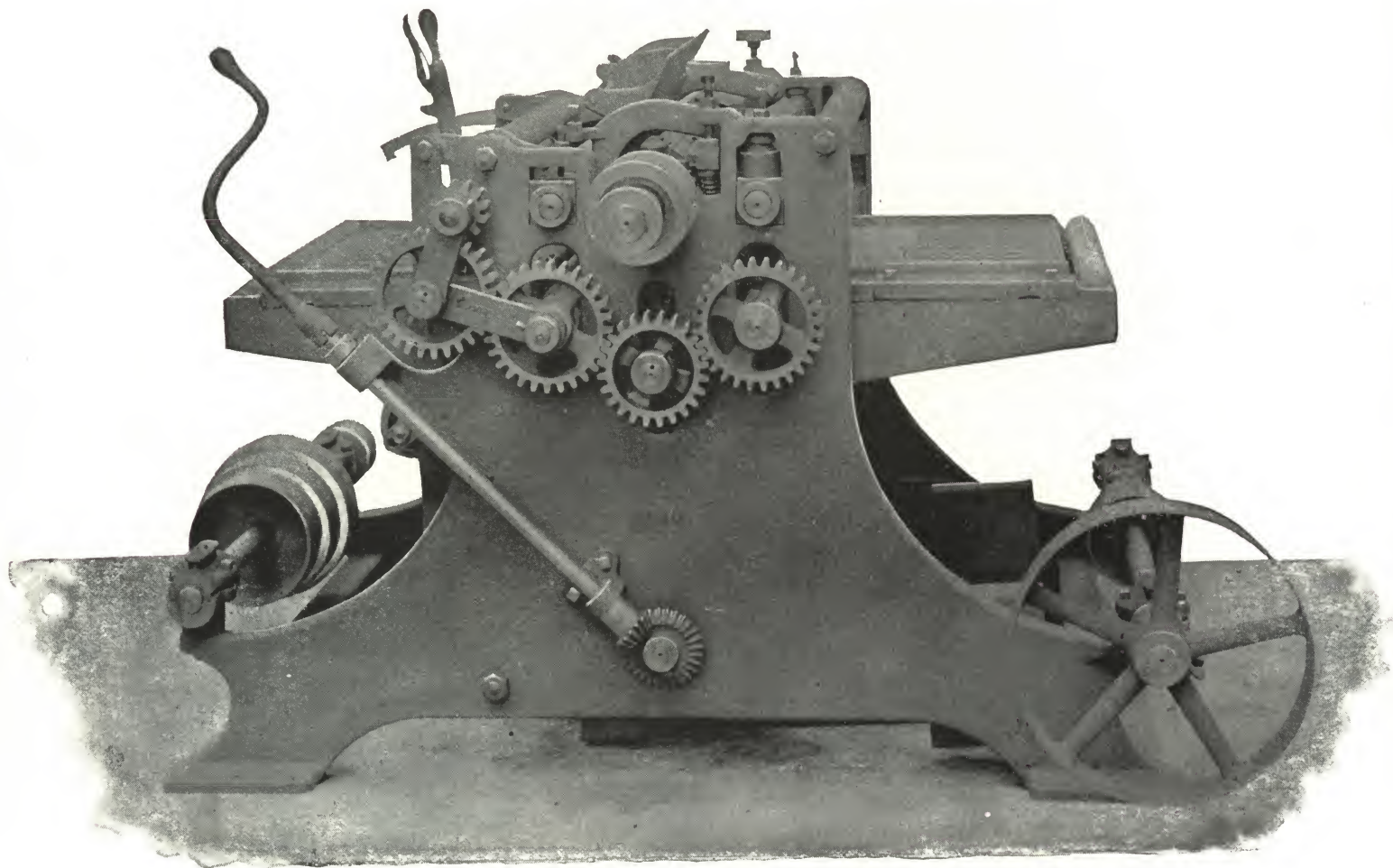
(Double Surfacers, see page 266.)

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 230.

C. B. ROGERS & CO.'S

No. 12, 24-Inch Single Surfacer.



THIS is a very substantial machine, designed expressly for general surfacing, works 24 inches wide and up to 6 inches thick. Has a good spread of base with feed counters well separated to give ample belt power.

The Cylinder on this machine is made from crucible steel forging, slotted on three sides, with substantial bearings in heavy boxes. It is double belted.

The Chip-Breaker swings up in circle of the cut, and pressure bar adjustable, both set close to the knife.

The Feed is strong, belted direct from the cylinder to counter on frame.

Cone Feed Pulleys allow for three changes of speed, changes being quickly made. The bed is raised and lowered by means of a hand-crank at the operator's end of the machine.

This whole machine is very carefully constructed, nicely finished and is in every respect a high-grade surfacer. Counter-shaft is included with the machine.

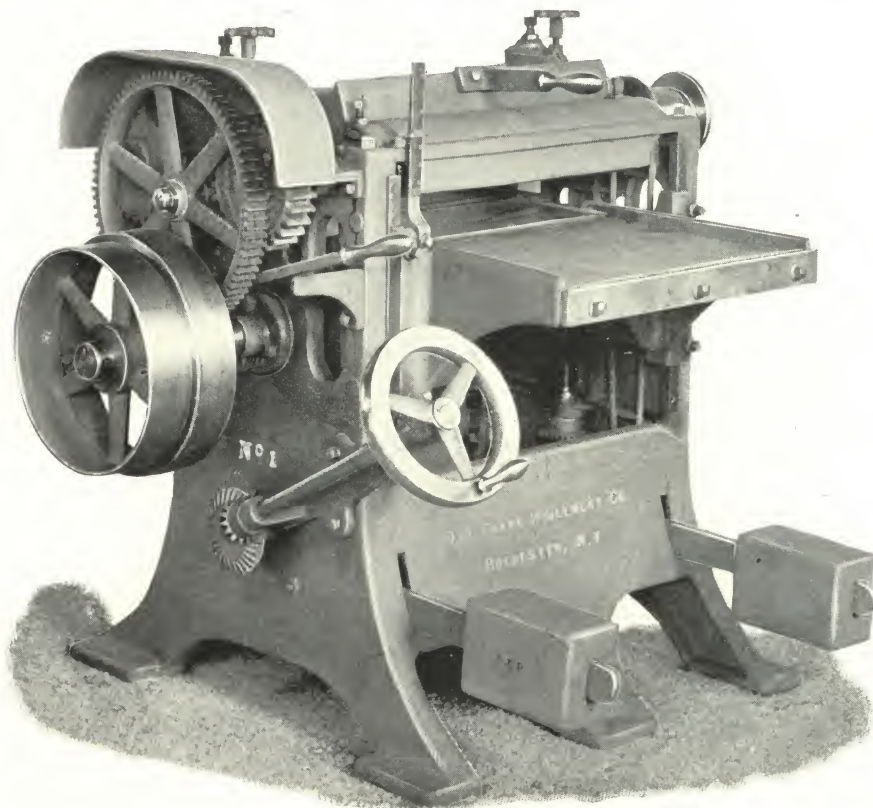
SIZE.	T. and I. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 230—Single Surface, 24 x 6..... (Double Surfacer, see page 268.)	12 x 6	900	2,700	Jesuit.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 231.

F. H. CLEMENT CO.'S

No. 1, Planer and Smoother, Improved.



THE engraving shows a new and fine design for a Single Surface Planer, made with special reference to doing smooth work, for casket, furniture, carriage, sleigh, chair, fine door and panel work, etc., and embodying many new and valuable features.

The Frame is unusually rigid and heavy, and it has three points of bearing on the floor. By this means it cannot be strained or twisted, either by bolting down or by settling of the floor, and the cylinder boxes can be kept screwed down close on the journals when running at a high speed, without heating, thus avoiding wavy work.

The Bed is very rigid, the web being 8 inches deep, and solidly ribbed under the cylinder, and it has six points of support on the frame, with gibs to take up lost motion, so that vibration under the cut is entirely avoided.

The Cylinder is a solid steel forging, with bearings $1\frac{5}{8}$ inches diameter, and 7 inches long, and is very carefully fitted and balanced, special pains being taken to grind the journals perfectly round, and scrape the bearing carefully to them. The box-caps are planed into recesses to prevent vibration sideways, and have large oil cups.

The Feed Works are particularly strong and well arranged, and the gearing is extra heavy. They are driven from the counter-shaft by cone pulleys, and there is a lever to stop the feed by shifting the first pinion out of gear.

The Feed Rolls are set very close to the cylinder, and arranged to hold the board down firmly to the bed. The upper in-feed roll is fluted, and pressure is obtained by weighted levers in the most approved form. All the rolls are $3\frac{1}{2}$ inches in diameter, and the upper ones are driven by the gearing.

The Pressure Bars are carefully arranged and fitted, and pieces $3\frac{1}{2}$ inches long, can be planed smooth without dubbing the ends. The forward pressure bar rises and falls with the in-feed roll, and both bars work close to the knives and are both adjustable to the lumber, independently of each other and the feed rolls.

Every detail has received careful attention and the fitting is done by experienced mechanics. All machines are belted up and tested before shipping.

Counter-shafts are included, unless otherwise ordered, and are provided with our "Perfect" self-oiling loose pulleys.

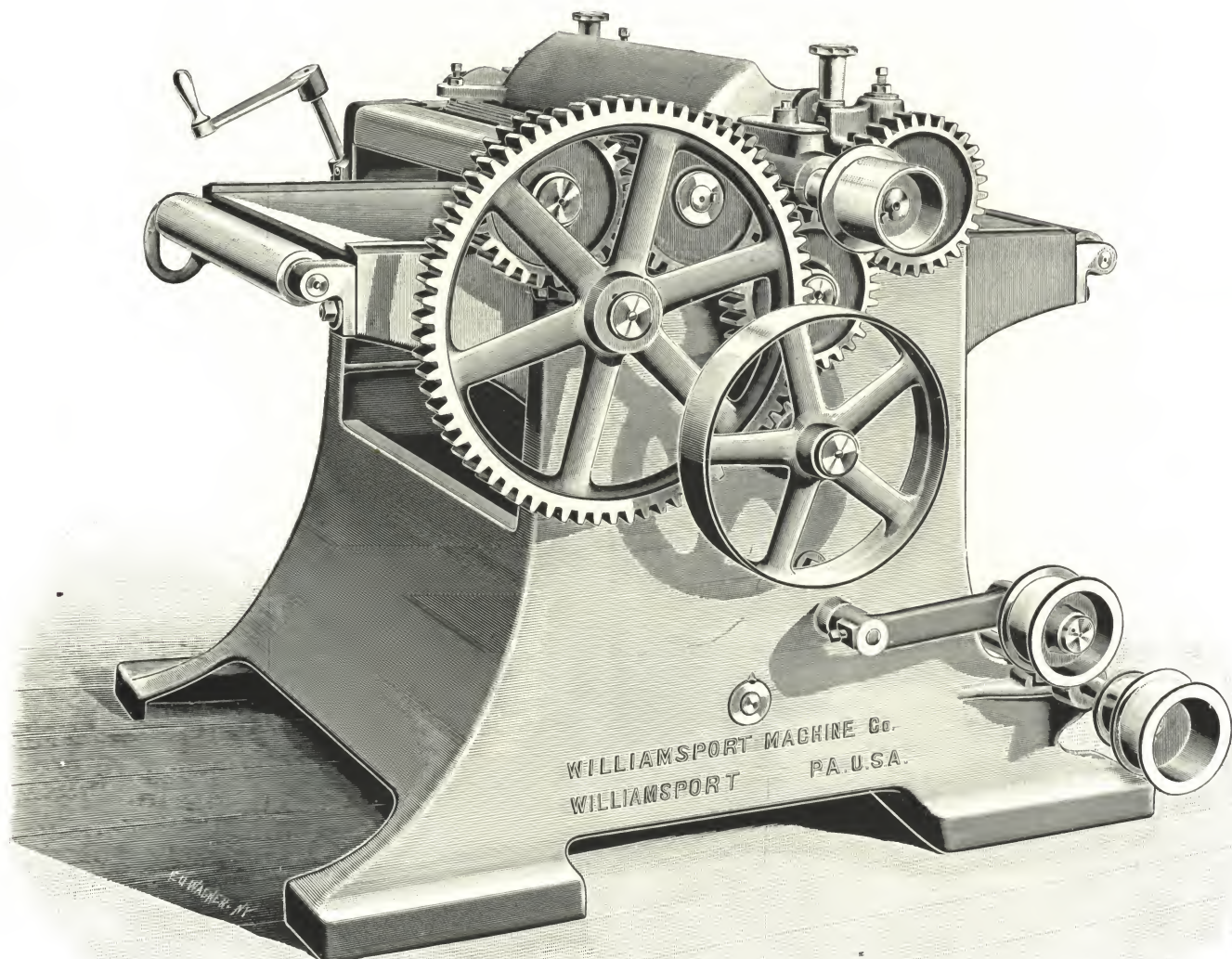
SIZE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 231 —Single Surface, 24 x 6	10 x $5\frac{1}{4}$	800	1,800	Jetudo.
Fig. 231 A—Single Surface, 20 x 6	10 x $5\frac{1}{4}$	800	1,600	Jeturus.
Fig. 231 B—Single Surface, 16 x 6	10 x $5\frac{1}{4}$	800	1,400	Jewess.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 232.

WILLIAMSPORT MACHINE CO.'S

No. 3, Single Surfacers.



FINDING a demand for a **Planer** heavier and with stronger feed than our small planers, we have placed upon the market the No. 3 Surfacers, which is faithfully represented in the cut above. This planer, in weight and strength, comes between the Pony Planers and the heavy "Williamsport" Surfacers. This machine weighs about 2,400 pounds and the frame is in **one solid casting**.

Cylinder is belted at both ends. There are two changes of feed and a tightener on the feed belt; also adjusting crank and attachment for stopping the feed, handy to the operator.

The Front Roll is weighted and connected with rockshaft, making the feed roll raise parallel at all times. This will be found a great improvement over the old way of weighting feed rolls.

Improved Pressure Bar and Chip-Breaker are provided, and the head is of solid forged steel. Gearing is very strong, belts well proportioned, and bearings of unusual length.

The Table is gibbed to the main frame, and is provided with loose gib for taking up the wear, thus preventing the planer from clipping ends. No expense has been spared to make this planer a standard on the market. We also build it as a Double Surfacers.

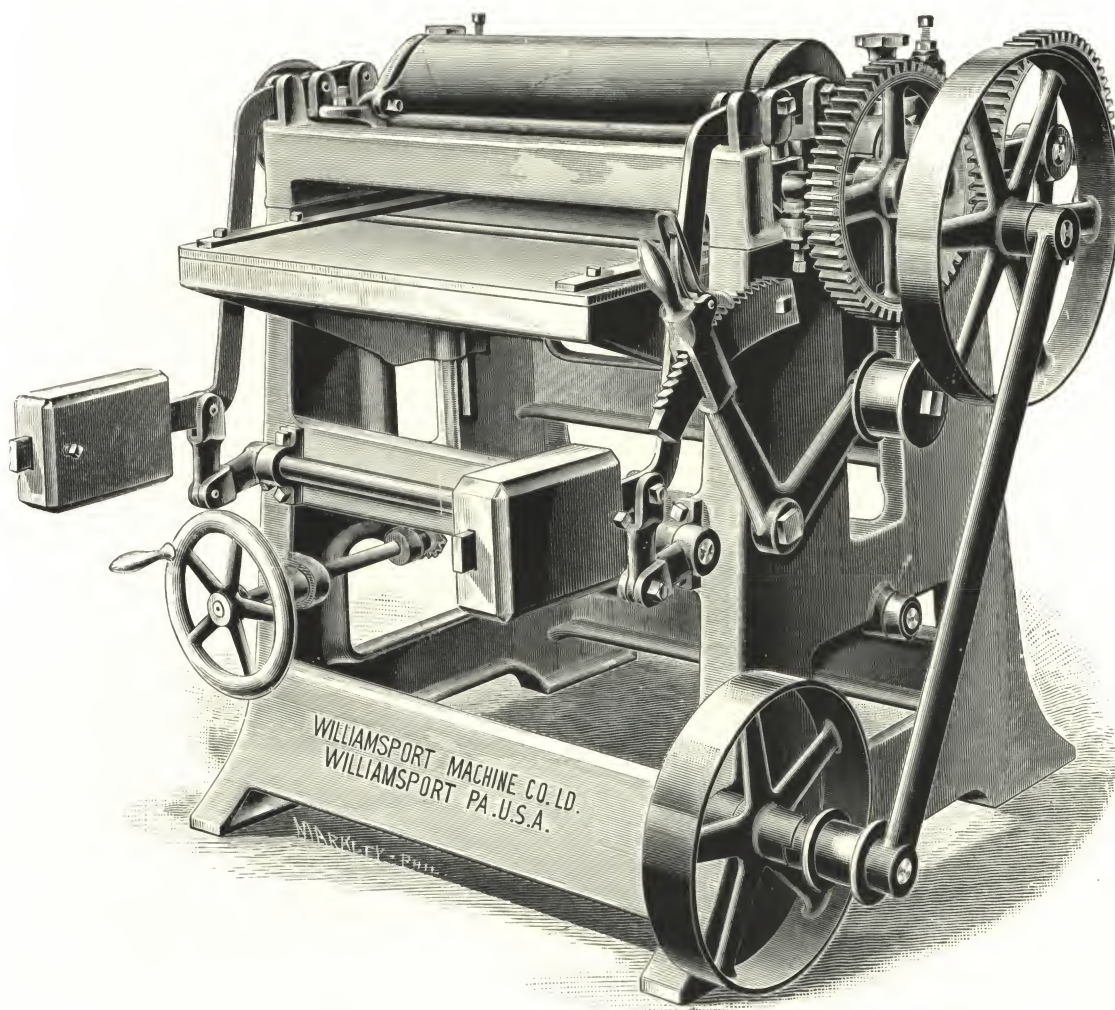
SIZE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Average H. P. Required.	Code Word.
Fig. 232—Single Surface, 24 x 8.....	12 x 6	900	2,400	5	Jillet.
(Double Surfacers, see page 269.)					

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 233.

WILLIAMSPORT MACHINE CO.'S

New and Improved Surface Planer.



THIS machine has been designed and built with the best care, for doing the smoothest work possible on either hard or soft wood. We present it to wood-workers as the highest point yet attained on light Surface Planers. "It is really a large planer in a small way."

The Frame is cast in one solid piece; is the best adapted for strength and strain.

The Bed is also cast in one piece, and fitted in the frame with special care, making it a very rigid and substantial machine for planing all kinds of hard or soft lumber, and makes what every manufacturer wants—a cut free from ridges, and leaving ends perfectly smooth without being clipped off.

The Cylinder is made from the best grade of steel, with the bearings and head forged in one piece, making this the best cylinder now in use.

The Shaving Hood is so arranged as to prevent any shavings from getting under the smooth rolls and marking the lumber.

There are **Two Pressure Bars**, one on each side of the cylinder, thus insuring steadiness, even when planing short or thin stock, and preventing tearing out or clipping of ends.

The Front Pressure Bar is self-adjusting, always regulating itself to the various thicknesses of lumber being planed.

There are **Four Feed Rolls**, extra large; the front feed roll is weighted and, being connected with our improved rock shaft connections, makes it impossible for one end of the feed roll to raise and the other end stay down, thus allowing the feed roll to press only on one edge of the stock, as is the case with most planers where the weights and levers are not connected with rocker shaft. The back feed roll receives its pressure from steel coil springs.

The Bed is raised and lowered by a hand wheel, giving quick change to different thickness of stock. This machine will plane from one-sixteenth of an inch to six inches thick, and as short as six inches in length.

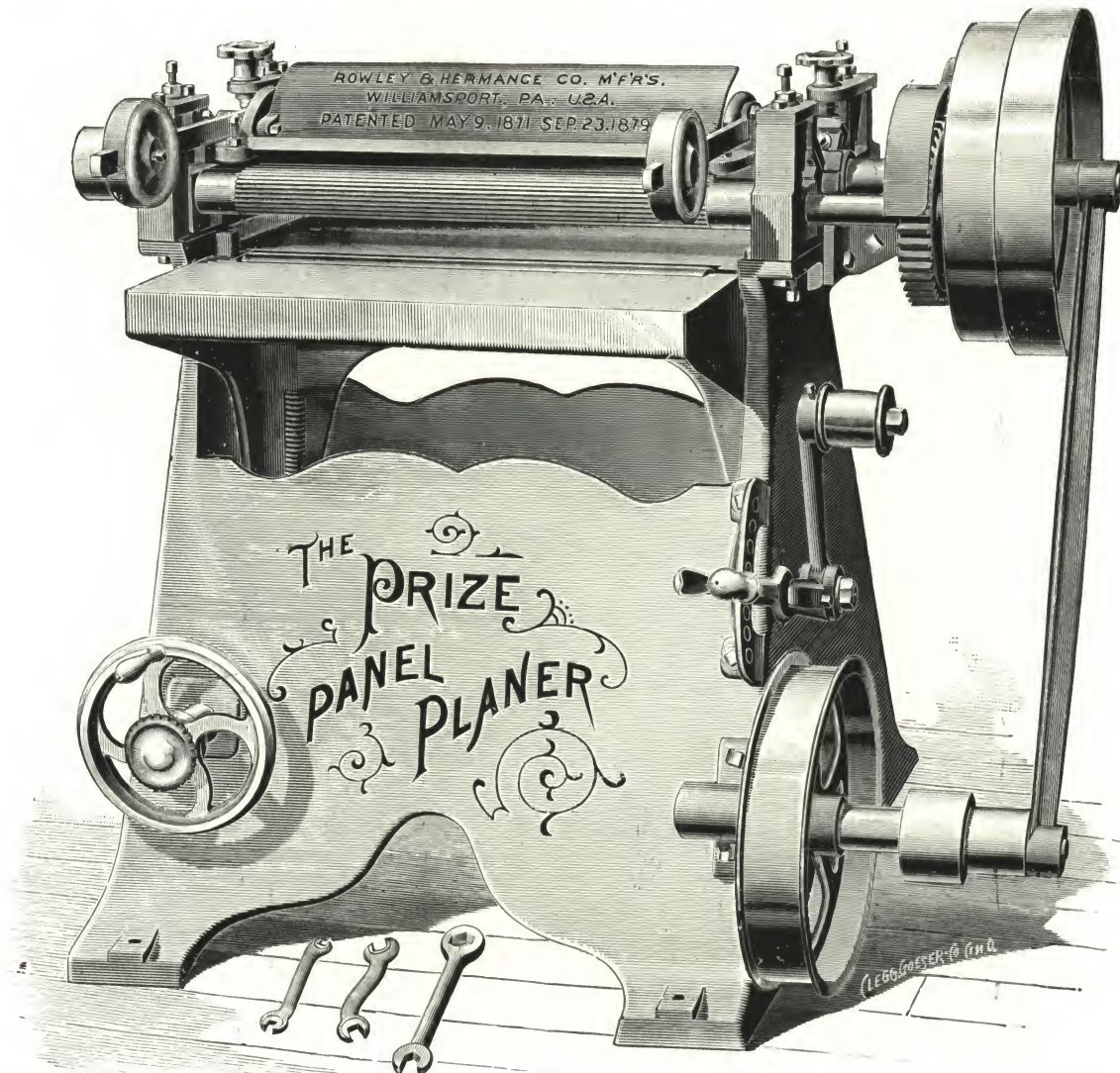
SIZE.	T. and L. Pulleys.	Revs. per Minute.	Floor Space Required.	Weight.	Code Word.
Fig. 233 —Single Surface, 24 x 6½.....	10 x 4½	900	4 ft. 4 in. by 4 ft.	1,500	Jilting.
Fig. 233 A—Single Surface, 20 x 6½.....	10 x 4½	900	4 ft. 4 in. by 4 ft.	1,350	Jobard.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 234.

ROWLEY & HERMANCO CO.'S

"Prize" Pony or Panel Planer.



A STRONGLY built, well finished small planer for general use in door shops, box and furniture manufactories, etc. For planing door panels and cigar box stuff it is equal to any in the market. In placing this machine upon the market, we claim for it the following advantages:

It has our Patent "Common Sense" Three-Part Journal Box.

The Frame is cast in one piece, making it very rigid.

The Design of the pyramid-shaped frame, base being wide, insures great strength.

The Two Pressure Bars, one in front and one in the rear of the head, the front being hinged and weighted, is self-adjusting for different thicknesses of stuff; both bars are placed close to the head to prevent clipping or tearing out.

The Forged Steel Head, very small in diameter, makes it perfectly safe to run at a high rate of speed, which is very essential in planing brush or cross-grained lumber.

The Steel Scraper attached to the delivering roll, which prevents it from gumming and marking the lumber.

The Shaving Guard, arranged to prevent shavings from getting beneath the smooth rolls and imprinting the work—an important point in the purchase of a smoothing planer.

That it is the heaviest Pony or Panel Planer in the market for the same amount of money.

It will plane long or short stuff, even as short as 4 inches, without clipping the ends, 18 or 24 inches wide, and from $\frac{1}{8}$ to 6 inches thick. It has two geared feed rolls and two rates of feed, 22 and 32 feet per minute.

	SIZE.	Pulley on Cylinder.	T. & L. Pulleys.	Revs. per Minute.	Cubic Measure- ment.	Approximate Weight.	Average H. P. required.	Code Word.
Fig. 234	—24-inch Single Surfacers without Counter	4 x 5	.....	4,000 to 5,000	57	1,400	2 to 3	Jockey.
Fig. 234 A	—Counter-shaft (if wanted), extra	.....	10 x 6	900	.....	250	.....	Jocose.
Fig. 234 B	—18-inch Single Surfacers without Counter	4 x 5	.....	4,000 to 5,000	51	1,200	2 to 3	Jocular.
Fig. 234 C	—Counter-shaft (if wanted), extra	.....	10 x 6	900	.....	250	.....	Jocund.

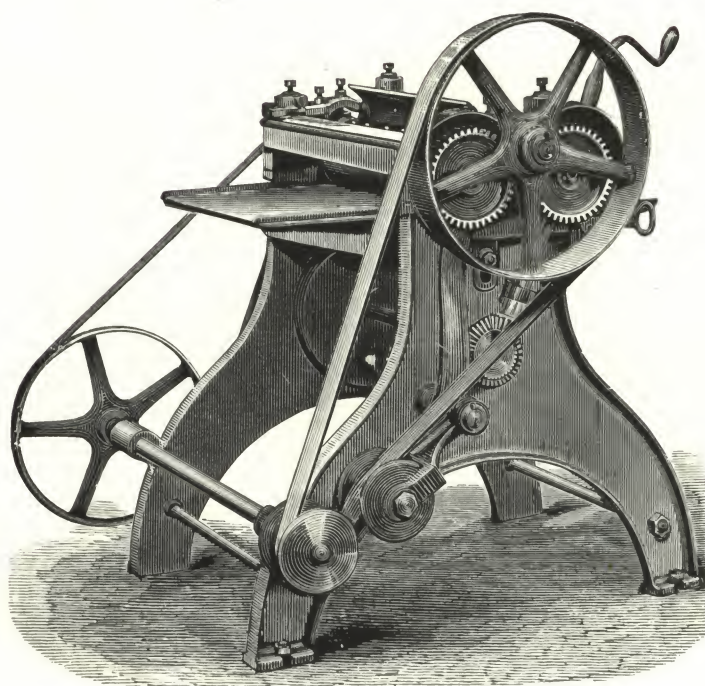
NOTE.—Counter-shaft is never included in the price for these machines, but is invariably quoted separately, for the reason that the majority of our customers buy these machines without counter-shafts.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 235.

GOODELL & WATERS'

Panel Planer.



THIS is the smallest Planer we build. It is designed to work **Panels, Door Stiles, Cigar Box Stuff** and all light work.

The Adjustment for thickness is obtained by raising and lowering the bed by means of a crank at the side of the machine, and convenient for the operator.

The machine is strong and compact, and no pains have been spared to make it as perfect as possible. It will work 18 inches wide and 3 inches thick.

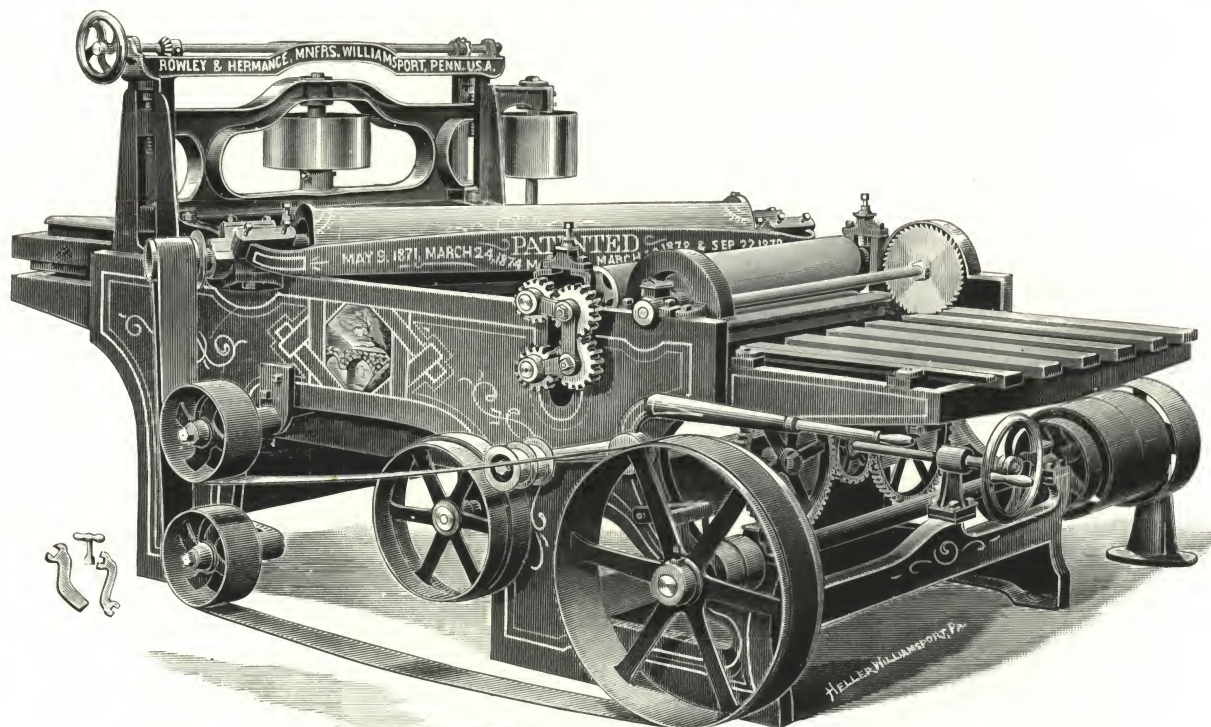
SIZE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 235—Panel Planer, to work 18 x 3.....	8 x 4	1,000	700	Jointed.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 236.

ROWLEY & HERMANCO CO.'S

Norris Patent Improved Diagonal Planer and Polishing Machine.



Capacity, 500 to 600 Doors in Ten Hours.

THIS machine will trim the wedges, plane and sand-paper doors, sash, blinds, shutters, base, door panels, casing, furniture, etc., etc., doing as much and better quality of work than twenty-five men can do by hand, or from four to five times as much work as can be done on any other machine.

It is equally valuable in small as well as large shops, as the saving is in the same proportion. One man only operates it; four to six horse power runs it. All articles have a perfect uniformity of thickness and of surface; there is no clipping out of cross-grained places or splitting of corners, or dubbing off of ends.

The Planer Head is placed at an angle of 45 degrees, which gives a uniformity of cut on stiles and rails of doors, sash, and other work having grain of wood at different angles, which insures a perfectly smooth surface, regardless of knots or cross-grained places in material being worked. The knives on this head are ordinary straight planer knives. The polishing disc is sufficient diameter to polish as wide as the head will plane. The sand-paper is fastened by means of steel segment frames, and can be cut without waste from the ordinary size of roll sand-paper, and can be quickly and easily renewed.

The Planer Head and Polishing Disc finishes the top surface of the work, so that the operator can at all times examine the quality of the work as it passes through the machine. This cannot be done on any other polishing machine made. The finished appearance of the door rails and stiles, and other light work, is the same, while all machines having a sand-drum or cylinder, finish the stiles and muntins with the grain, and the rails across the grain, giving a very different appearance to the work when completed. This is a very important feature.

It planes and polishes, or planes or polishes only, as may be desired, from $\frac{3}{8}$ to 3 inches thick, at the rate of 16 feet per minute on the slow feed, to 20 feet per minute on the fast speed. The bed raises and lowers on inclines, and can be changed for different thicknesses of work in one minute.

If desired, a cutter head can be added for joining the edges.

Size, 10 feet long by 6½ feet wide. We are the only makers of this machine for the United States.

SIZE.	Tight and Loose Pulleys.	Revs. per Minute.	Cubic Measurement.	Approximate Weight.	Average H. P. Required.	Code Word.
Fig. 236 —To Plane and Polish 36 inches wide.....	12 x 7	650	240	4,500	4 to 6	Joists.
Fig. 236 A—To Plane and Polish 42 inches wide.....	12 x 7	650	284	5,400	6 to 8	Joker.
Fig. 236 B—To Plane 36 inches wide, without Polisher	12 x 7	650	200	3,500	3 to 4	Jollity.
Fig. 236 C—To Plane 42 inches wide, without Polisher	12 x 7	650	240	4,050	4 to 5	Jolter.
Fig. 236 D—To Plane and Polish 36 inches wide, with Two Polishing Discs.....	14 x 8	650	360	6,000	4 to 10	Journal.
Fig. 236 E—To Plane and Polish 42 inches wide, with Two Polishing Discs.....	14 x 8	650	420	7,500	4 to 10	Jovial.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 237.

ROWLEY & HERMAN CO.'S Box Board or Hand Matcher.

WE here present a machine that has **two sets of saws or cutters** on same arbor—one for grooving, the other for tonguing—and will work up to $1\frac{1}{4}$ inches thick.

It is particularly designed to meet the wants of box makers, but is suitable for other light work.

	Pulley on Arbor.	Revs. per Minute.	Cubic Measure- ment.	Approx- imate Weight.	Average H. P. Required.	Code Word.
Fig. 237.....	4 x 5	3000	28	.....	1	Joyful.

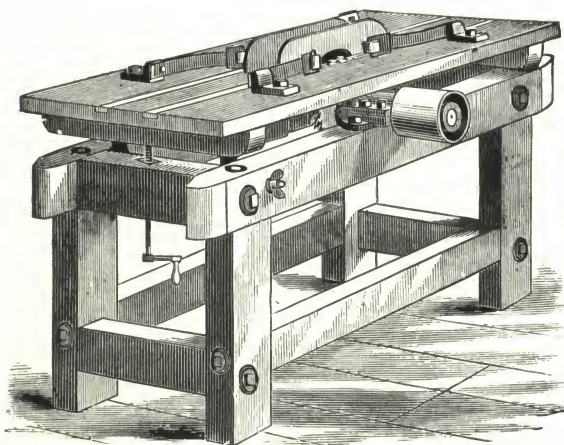
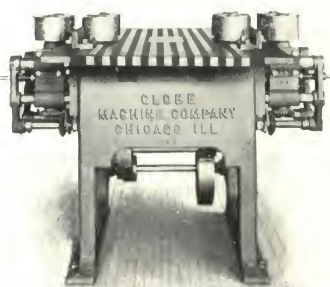
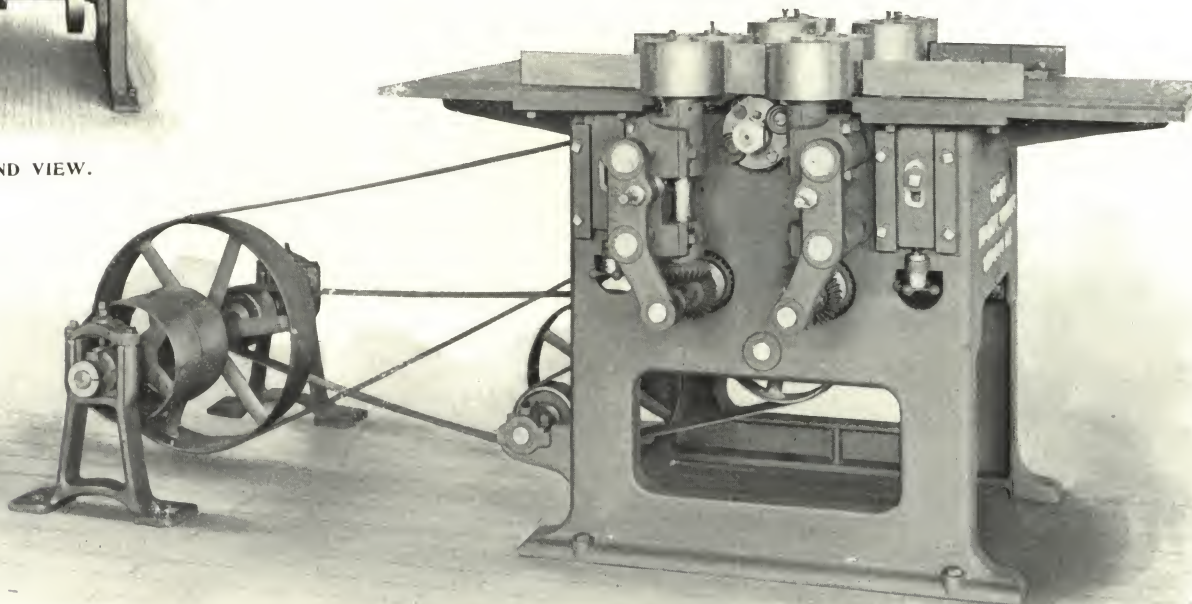


Fig. 238.

GLOBE MACHINE CO.'S Power Feed Box Matcher.



END VIEW.



THIS machine is especially fitted for taking the place of the hand matcher now commonly in use. Material from $\frac{1}{4}$ inch to 2 inches thick can be worked.

Narrow or Wide Boards can be fed over the heads and from any length from 8 inches up. Tongue, groove and halving or ship-lap can be done with the same heads. The machine has adjustable table and can be used with either saws or Shimer heads.

The Rolls are adjusted in a manner that holds the board close to the table while passing over the head, thus preventing splitting or tearing the boards.

Feeds 100 feet per minute over each head. Can be made with slower feed if desired.

The Heads are on one arbor, which enables the operator to feed both heads at the same time.

Feed rolls, 6 inches diameter and $3\frac{1}{2}$ inches high and 9 inches between centers; arbor, $1\frac{5}{8}$ inches. The machine is supplied with special counter-shaft.

	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 238.....	10 x $4\frac{1}{2}$	800	1,800	Jubilant.

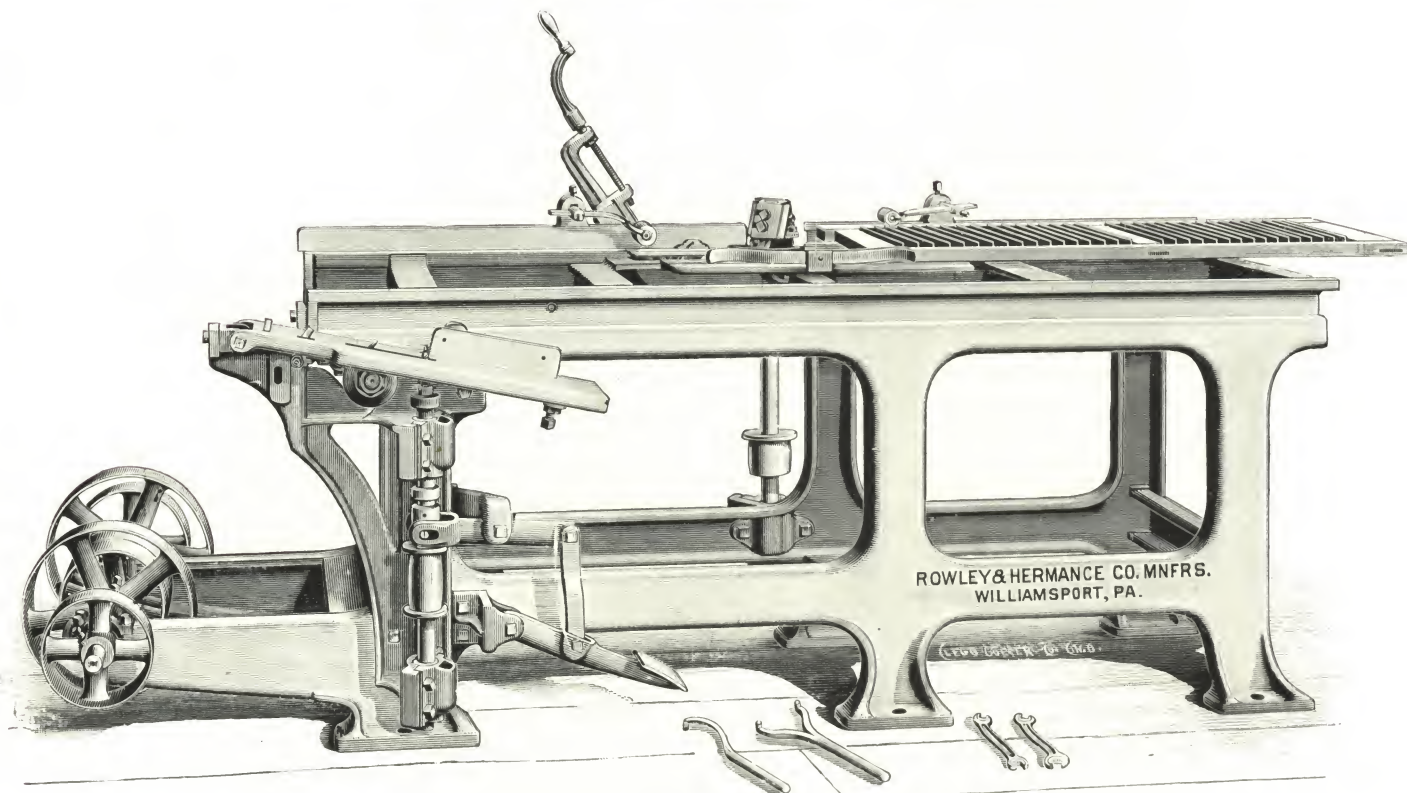
AMERICAN WOOD-WORKING MACHINE CO.

Fig. 239.

ROWLEY & HERMANCO CO.'S

Blind Jointing, Rabbeting and Beading Machine.

WITH SASH PLOWING AND BORING ATTACHMENT.



THE cut illustrates one of the most effective machines of its kind on the market for **Rabbeting, Jointing and Beading Blinds**, and contains improvements which will not be found on any similar machine. It is quickly adjusted to any size of blind, and the work is performed in one operation in the most satisfactory manner. The head on upright arbor rabbets and joints, and is constructed so as to give the knives a draw cut, which leaves the work smooth.

The Head on the horizontal arbor for beading the stile is adjustable for variation in cut, and being placed on an incline, the belt is always of uniform tension.

The Spring that holds the blind up to the guides is fastened to the table on which the blind rests, and is adjustable for different widths.

The Guides are in two parts: the one in front of the cutter-head can be adjusted to take a heavy or light cut; the guide in rear of cutter-head is always set forward the depth of the cut, by which means the blind is jointed perfectly straight. This is a very important feature. Six hundred pairs of blinds can be jointed, rabbeted and beaded on this machine in ten hours.

We also build this machine as a **Blind Jointer, Rabbeter and Beader** without the **Sash Plowing and Boring Attachment**, and, if desired other attachments for Sash work may be used on this machine for sand-papering and jointing the meeting rail.

STYLE.	Tight and Loose Pulleys.	Revs. per Minute.	Cubic Measure.	Approximate Weight.	Average H. P. Required.	Code Word.
Fig. 239 —No. 1, Blind Jointing and Beading Machine	8 x 4	800	65	1,000	1 to 2	Judger.
Fig. 239 A—No. 2, as Sash Jointing and Sand-Papering Machine (only)	8 x 4	800	65	1,000	1 to 2	Judicial.
Fig. 239 B—No. 3, as Sash Jointing and Sand-Papering Machine with Plowing and Boring Attachment.....	8 x 4	800	65	1,100	1 to 2	Juego.
Fig. 239 C—No. 4, as Sash Jointing and Sand-Papering Machine with Plowing, Boring, Blind Jointing, Rabbeting and Beading Attachment.....	8 x 4	800	65	1,100	1 to 3	Jugated.
Fig. 239 D—The Horizontal End Boring Attachment for Boring the End Hole, Extra.....	.....	.....	.....	150	.....	Juice.

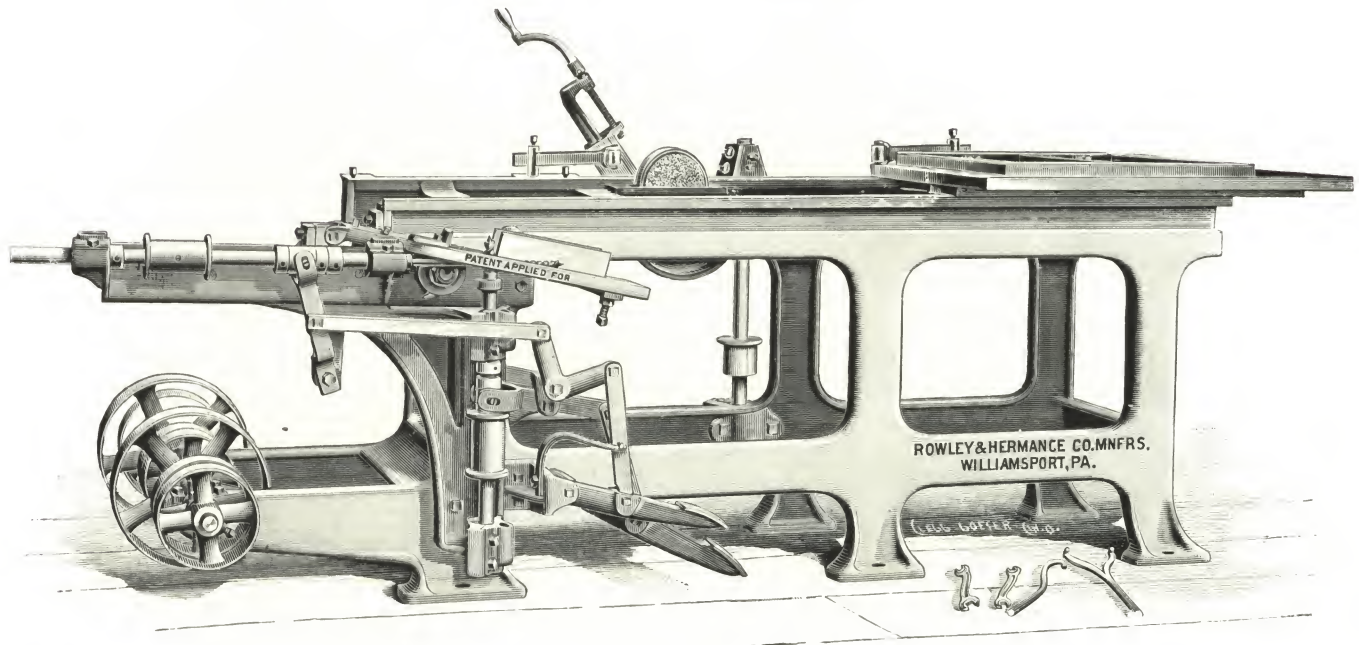
AMERICAN WOOD-WORKING MACHINE CO.

Fig. 239.

ROWLEY & HERMANCE CO.'S

Combined Sash Jointing and Sand-Papering Machine.

With Plowing and Boring Attachment, also With End Boring Attachment
for Boring the Connecting Hole.



WE were the first to offer to manufacturers of sash, a machine to joint and sand-paper the meeting rail of sash. This cut illustrates our new improved machine, which is simple in construction and rapid in operation.

It Joints and sand-papers the meeting rail square and straight in one motion,* better than can be done by hand, and it can be operated with cheap labor. The sash is placed on movable carriage, and meeting rail rests against adjustable stops, by which means a heavy or light cut can be obtained. Springs hold the sash in position while passing through, thus leaving meeting rails all one thickness.

The Plowing and Boring Attachment, the table of which is set on an incline, as shown in cut, is very simple in its construction and easily operated. The sash is placed on the grooving table next to the inside guide, and push forward to the first stop, then by pressing the foot on the foot-treadle the bit bores the stile, and by disengaging the foot the bit drops down out of the way and the sash is pushed forward to the second stop completing the groove, and the second hole is bored by a similar operation. The sash is then placed next to the outside guide, and by movement of the foot-treadle operating the horizontal boring bit, bores the connecting hole between the two large holes. **This horizontal attachment is only furnished when ordered, and at additional price.** We can also add the **Blind Jointing and Beading** attachment to this machine, if desired.

This improvement makes it the most complete and valuable machine in use, and a close examination of the cut will show that the machine is designed throughout to meet all the requirements of a combined **Sash Jointing and Sand-Papering Machine**, and being one of the latest improved machines of its kind on the market, it should have the careful consideration of planing mill men.

Eight hundred windows can be jointed and sand-papered on this machine in ten hours.

See opposite page for Code Word and Sizes.

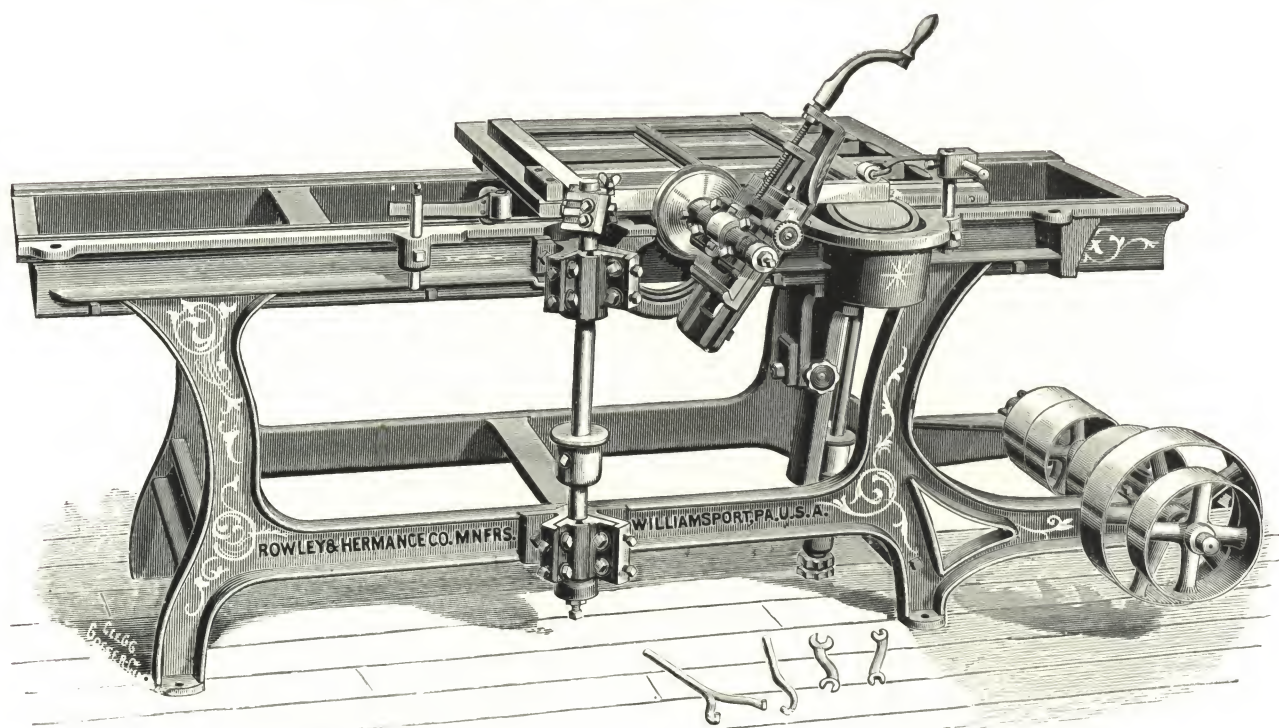
AMERICAN WOOD-WORKING MACHINE CO.

Fig. 240.

ROWLEY & HERMANCO CO.'S

Combination Sash Jointing and Sand-Papering Machine.

With Bevel Check Rail Sand-Papering Attachment.



THIS machine is designed for jointing and sand-papering the meeting rail and sand-papering the bevel check rail of sash at one operation.

It is simple, quick and efficient, and can be operated by cheap labor.

The Head on the upright arbor joints the meeting rail, and is constructed to give the knives a draw-cut.

The Sand-Papering Disc next to the jointing head has vertical and horizontal adjustments, and sand-papers the top of the meeting rail and the ends of the stiles and bars.

The Bevel Check Rail Sand-Papering Disc has vertical, horizontal and angular adjustments, and sand-papers the bevel of the check rail.

The Sash is placed on a movable carriage with the meeting rail resting against adjustable stops, by which means a heavy or light cut can be made.

Spring Rollers hold the sash in position while passing through, thus leaving the meeting rails all one thickness.

Eight hundred windows have been jointed and sand-papared in ten (10) hours on this machine.

STYLE.	Tight and Loose Pulleys.	Revs. per Minute.	Cubic Measure.	Approximate Weight.	Average H. P. Required.	Code Word.
Fig. 240 —No. 5, Sash, Jointing and Sand-Papering Machine with Bevel Check Rail Sanding Attachment.....	8 x 4	800	58	950	1 to 2	Julep.
Fig. 240 A—No. 6, the same Machine, including Plowing and Boring Attachment.....	8 x 4	800	.....	950	1 to 2	Jumble.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 241.

LEVI HOUSTON CO.'S

New Blind Rabbeting and Jointing Machine.



THE accompanying cut represents our **Blind Rabbeting and Jointing Machine**, which is the most complete, handy and economical machine for this work that has been offered to the market. Following are some of the **advantages of this machine**:

The blind is fed on its edge, doing away with a wide table, to admit of a wide blind being rabbeted; the bead is stuck on the same side with the guide, avoiding the unevenness usually found in beads on blinds; the headstock carrying the rabbeted head is set on a miter with the face of the blind, which makes a free cut on both sides of the rabbet; **the headstock is adjustable** vertically and horizontally while in motion by means of screws; **both feed shafts** are hung in pivoted boxes and the idler on opposite side of machine is adjustable to take up slack on jointer head.

The Table on this machine is long and the after part is adjustable in line with the cutters, which insures straight work. The blind is held firmly by means of springs, and is fed through by two rubber balls, one before and the other after the cutters. The first roll is fitted with a spur or fluted roll on the lower end, which operates on the part to be cut out, making a strong feed and much better work than can be done with the usual method of pushing the blind through by hand. **The blind is jointed on both edges** at the same time it is rabbeted and beaded. This machine will take in a blind up to 26 inches wide.

With all these advantages, the low price of this machine especially recommends it to the market.

Belts Required: One belt 8 feet 5 inches long, 2½ inches wide; one belt 12 feet 9 inches long, 2 inches wide for jointer; one belt 8 feet 6 inches, 1½ inches wide; one belt 9 feet 2 inches long, 1½ inches wide.

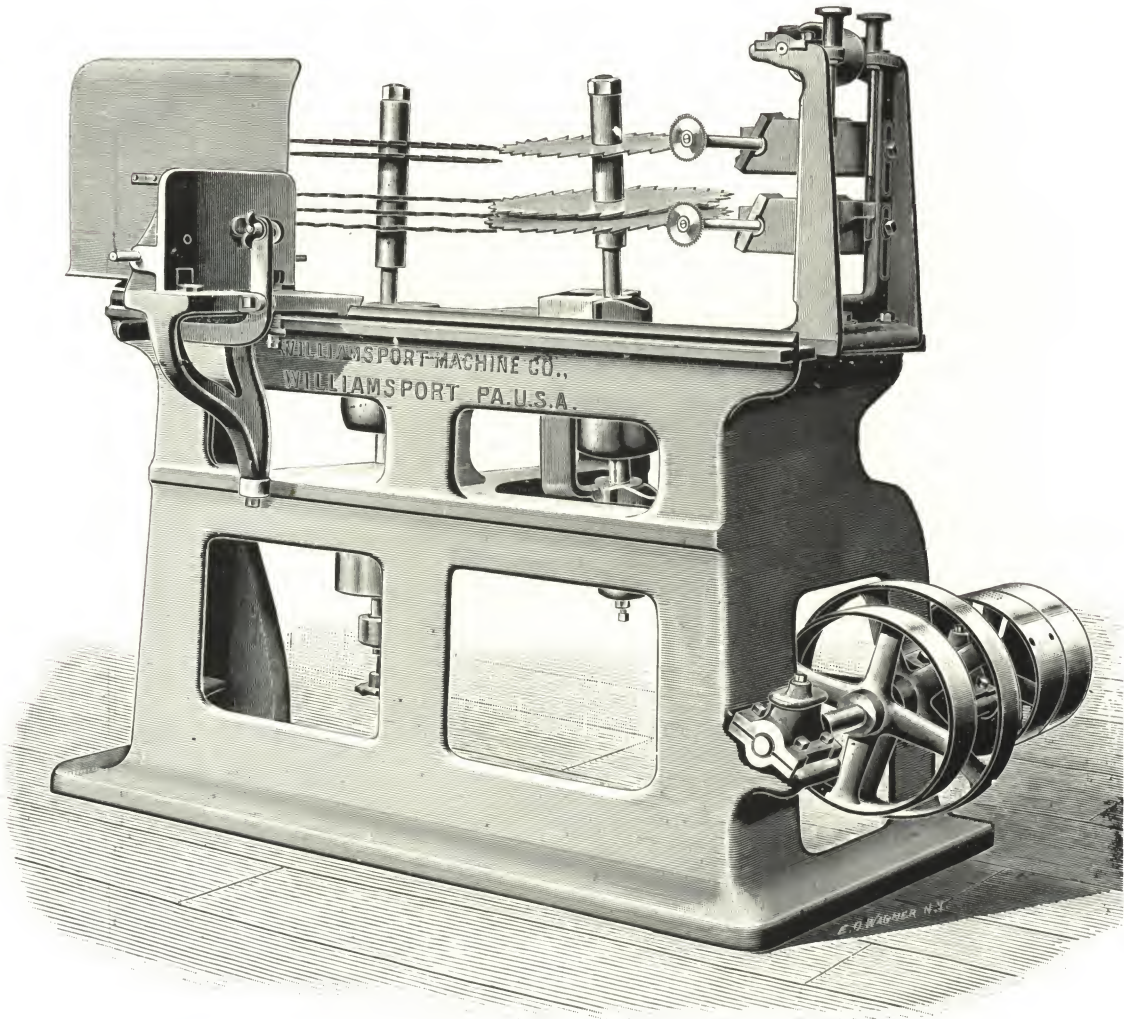
STYLE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 241 —With Jointing Attachment.....	10 x 4	550	700	Jumento.
Fig. 241 A—Without Jointing Attachment	10 x 4	550	700	Jump.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 242.

WILLIAMSPORT MACHINE CO.'S

New Single Motion Relisher and Wedge Cutter.



THE cut herewith represents a new **Door Relisher and Wedge Cutter**, the weight of which commends it as a substantial machine for the work intended.

The Frame is cast in one piece, and by the arrangement of the carriage and rail on which it slides, the operator is permitted to get closer to the saws than on the old style machine, thus facilitating the handling of work considerably.

The Cut explains the machine.

The First Arbor is perpendicular, the second upright arbor is thrown forward on the right angle to give the bevel to the wedge, and can be adjusted to give different bevels to accommodate different widths of tenons, or can be moved to a perpendicular. The two horizontal arbors are adjusted by screws, and can be moved up and down to cut any width of relish.

The Two Small Saws are fastened on end of arbors with screws, the heads being flush with face of saws.

The Sliding Bed moves the length of machine on tracks. The rail to be relished is placed on its worked edge, on the bed, with shoulder against the stop, (which can be adjusted to any depth of cut,) and run through machine, thus cutting the **relish and wedge in one movement**. One man can relish the rails and make the wedges for 1,000 to 1,200 doors in ten hours.

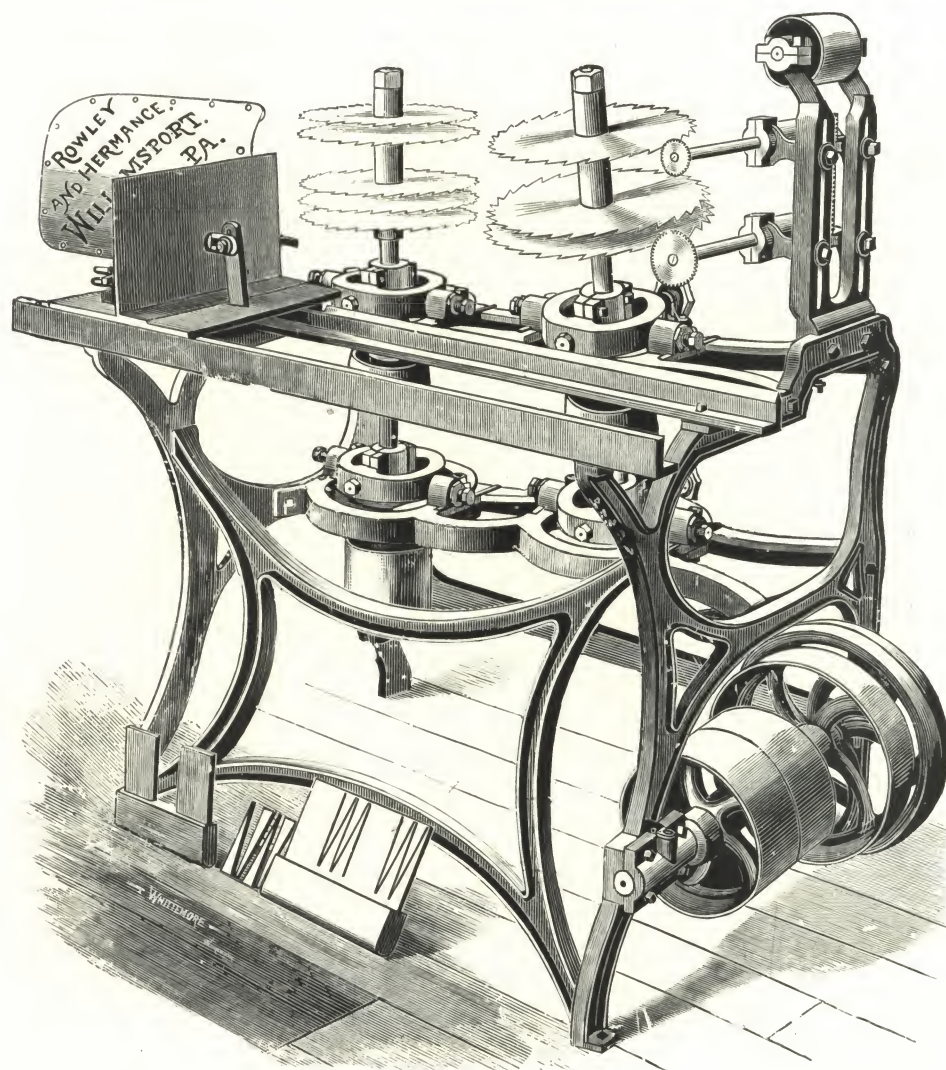
STYLE.	Tight and Loose Pulleys.	Revs. per Minute.	Floor Space Required.	Weight.	Average H. P. Required.	Code Word.
Fig. 242—Single Motion Relisher and Wedge Cutter.....	10 x 4	700	52 x 56½ inches.	1,000	2 or 3	Juncate.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 243.

ROWLEY & HERMAN CO.'S

Single Motion Wedge-Cutting Relisher.



Patented April 6, 1875.

COMBINED Relisher and Wedge-Cutter, for relishing the rail and cutting the wedges at one operation. The cut explains the machine.

The First Arbor is perpendicular, the second upright arbor is thrown forward on the right angle to give the bevel to the wedge, and can be adjusted to give different bevels to accommodate different widths of tenons, or can be moved to a perpendicular.

The Two Horizontal Arbors are adjusted by screws, and can be moved up and down to cut any width of relish.

The Two Small Saws are fastened on end of arbors with screws, the heads being flush with face of saws.

The Sliding Bed moves the length of machine on tracks.

The Rails to be relished are placed on their worked edge, on the bed, with shoulders against the stop (which can be adjusted to any depth of cut), and run through the machine, thus cutting the relish and wedge in one movement. One man can relish the rails and make the wedges for 1,000 to 1,200 doors in ten hours.

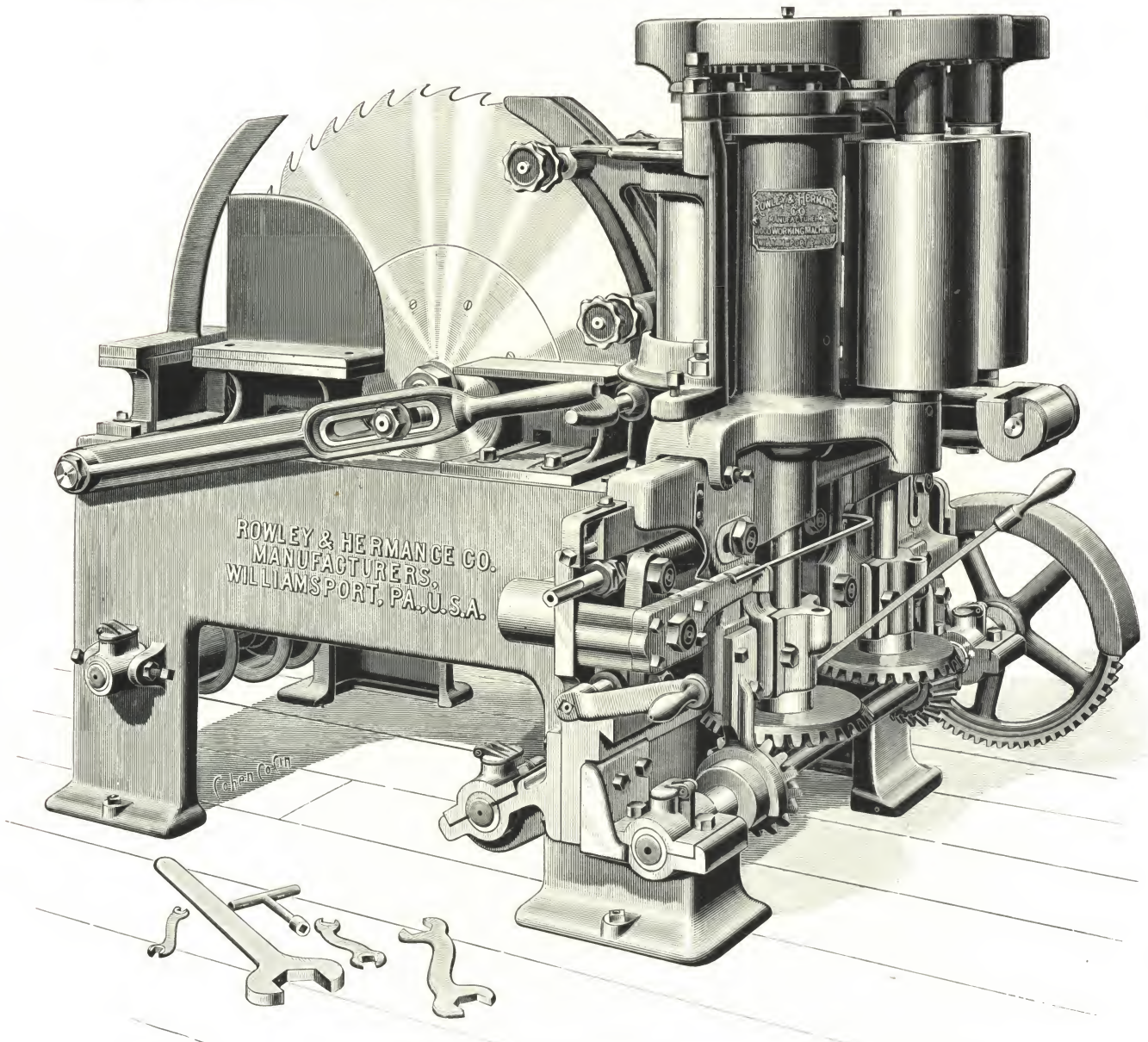
STYLE.	Tight and Loose Pulleys.	Revs. per Minute.	Floor Space Required.	Weight.	Average H. P. Required.	Code Word.
Fig. 243—Single Motion Wedge-Cutting Relisher....	9 x 4	700	3 x 4	600	2 to 4	Junior.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 244 G.

ROWLEY & HERMANCO CO.'S

Improved "New Champion" Re-Sawing Machine.



THE above cut represents our 38-inch **New Champion Re-Sawing Machine**. The frame is very heavy. It is cast in one piece and is especially designed to rigidly support the working parts. The arbor is made of steel and is heavy. It overhangs the box next to the saw, which admits of the saw being easily removed.

The Saw Arbor boxes are connected by a heavy yoke and gibbed to the frame, and are moved to and from the rolls by means of a screw, keeping the saw always in line with them.

The Rolls move upon the platen in pairs, and readily adjust themselves to unequal thicknesses of lumber, and are perfectly self-centering. They open 6 inches, and a 1-inch board may be cut from a 4-inch plank. One pair of rolls may be made stationary, and lumber of even thickness cut upon that side, and all inequalities in thickness be confined to the other side.

The Table upon which the lumber rests is very close to the rolls, which admits the sawing of narrow boards.

The Lumber is guided by adjustable arms on each side of the saw; both arms are fitted with springs and may be swung entirely free of the saw by simply removing a pin.

The Feed Works are strong and reversible, and by a slight movement of the lever shown at front of machine, the lumber may be run from the saw more rapidly than it is fed to the saw.

The Feeding Gears are large, strong and not liable to wear out nor break by hard service.

The Platen that supports the rolls turns upon a center for sawing beveled sidings, etc., and is regulated by a graduated index plate, which can be conveniently seen by the operator. By means of a novel attachment the saw may be easily lifted out of the frame and kept suspended on a pin in the center, thus avoiding the bending and twisting of the teeth, which often occurs when the saw is rolled out in the usual way, as the teeth are very thin and the saw heavy.

The Saws are furnished either segment or solid plate, and are ground taper to No. 16 gauge unless otherwise ordered. The segment saw of large size will not buckle when hot, as the joints permit the expansion of the metal, and will cut picture frame backing as well as the thickest plank. The saw is filed and set, and the machine is thoroughly tested before leaving the works, and is guaranteed to give entire satisfaction.

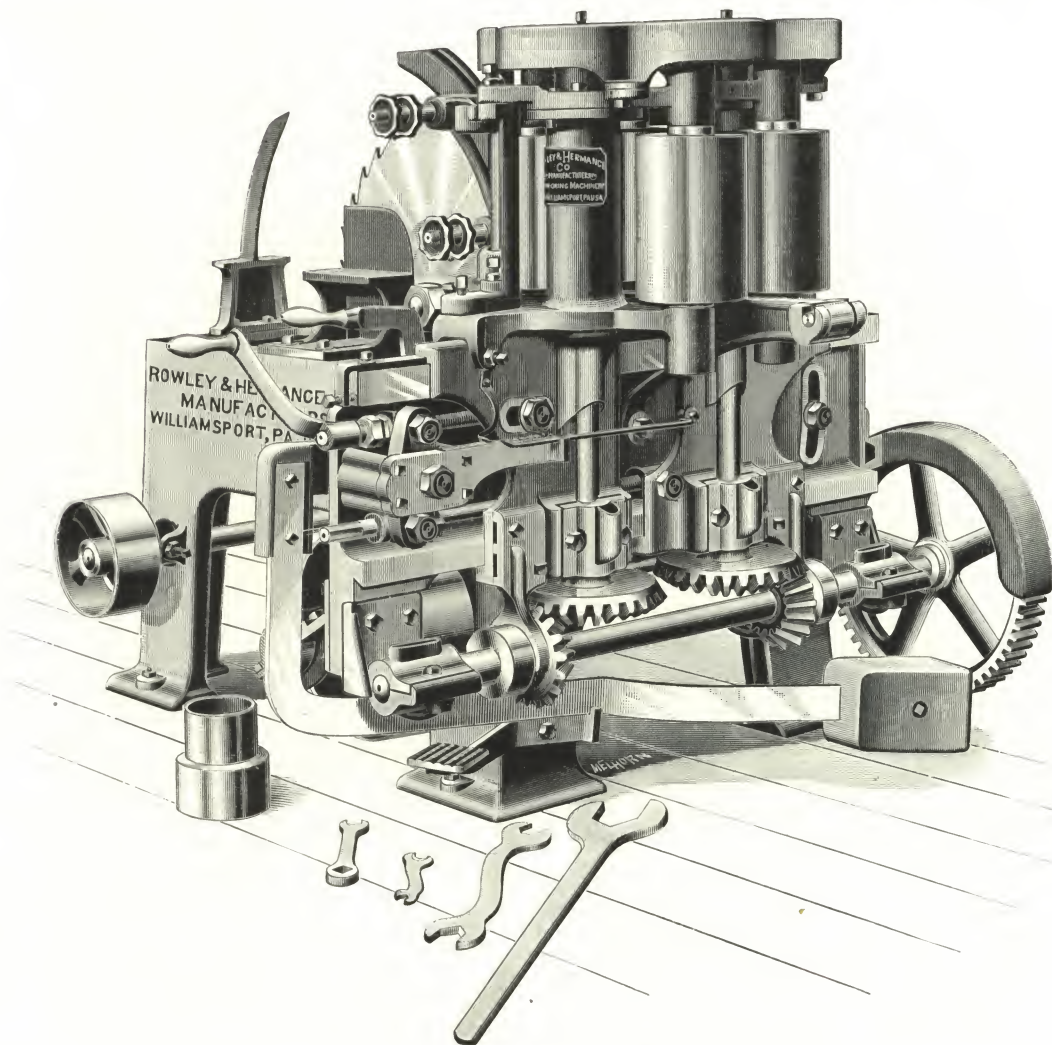
See opposite page for Code.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 244 K.

ROWLEY & HERMANCE CO.'S

Improved "New Champion" Circular Siding Saw.



24-INCH RE-SAW.

THIS machine is especially designed for making bevel siding and general re-sawing up to 10 inches wide. **The Frame** is cast in one piece and very heavy, insuring strength and solidity. The arbor is of the best steel. **The Saw** can be moved up to the rolls to allow for wear.

The Rolls are self-centering for any thickness up to 6 inches. One pair of rolls can be made stationary, and lumber of even thickness cut upon that side. The platen that supports the rolls turns upon a center for sawing beveled siding, etc., and is regulated by a graduated index plate, which can be conveniently seen by the operator.

The Lumber is guided by adjustable arms on each side of the saw; both arms are fitted with springs and can be swung entirely free of the saw by simply removing a pin. The feed works are strong and positive. The rolls are opened and the lumber released by placing the foot on the treadle shown in the cut. For further description, see page 290.

Counter-shaft furnished for the 24-inch machine at an extra cost when ordered, with tight and loose pulleys, 12 x 8, and should run 500 revolutions per minute.

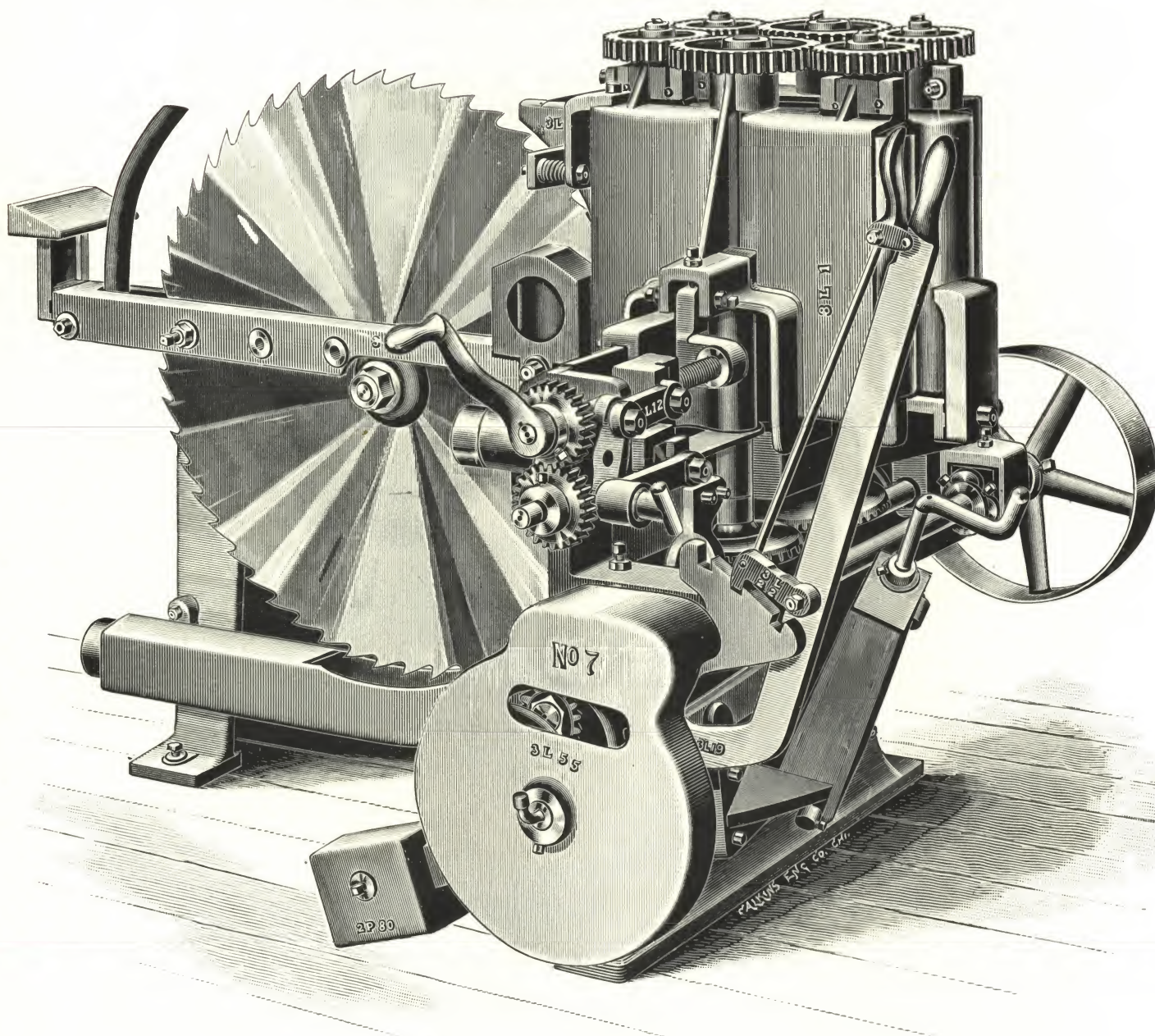
SIZE OF SAW.	Width of Cut	Size of Pulley on Mandrel.	Speed of Mandrel.	Cubic Measurements.	Approximate Weight.	Average H. P. Required.	Code Word.
Fig. 244 —60-inch Segment Saw	27 in.	24 x 12	650	200	5,500	12 to 15	Juniper.
Fig. 244 A—54-inch " "	25 "	20 x 10	700	190	5,000	12 to 15	Kaoline.
Fig. 244 B—50-inch " "	22 "	18 x 10	750	185	4,600	10 to 12	Keenly.
Fig. 244 C—44-inch " "	20 "	18 x 10	850	175	4,200	10 to 12	Keeper.
Fig. 244 D—42-inch " "	19 "	18 x 10	850	170	3,900	9 to 10	Kennel.
Fig. 244 E—42-inch Solid Plate Saw.....	19 "	18 x 10	850	170	3,900	9 to 10	Kentish.
Fig. 244 F—38-inch Segment Saw	17 "	14 x 8	950	132	3,700	8 to 10	Kerolite.
Fig. 244 G—38-inch Solid Plate Saw.....	17 "	14 x 8	950	132	3,700	8 to 10	Kestrel.
Fig. 244 H—34-inch Segment Saw	15 "	14 x 8	1,050	120	3,400	6 to 9	Ketchup.
Fig. 244 I—34-inch Solid Plate Saw.....	15 "	14 x 8	1,050	120	3,400	6 to 9	Kettle.
Fig. 244 J—30-inch " " "	13 "	12 x 8	1,200	112	3,200	4 to 8	Keyhole.
Fig. 244 K—24-inch " " "	10 "	8 x 6	1,500	80	2,000	4 to 6	Kicker.
Fig. 244 L.—Counter-shaft for either of the Re-sawing Machines. If wanted, extra							Kidnap.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 245.

HOYT & BROTHER CO.'S

No. 7, Re-Sawing Machine.



THE above cut represents our **No. 7 Re-Saw**, carrying a 38-inch **Taper Ground Saw**, and will split 15 inches wide and 8 inches thick or less. **The Frame** is one solid casting.

The Feed is very strong, and may be stopped, started or reversed instantly.

There are **Bearing Pieces** attached to the **Main Bed**, for the purpose of carrying narrow stuff near the top of saw. By loosening four bolts, these may be turned down or removed in very little time.

By shifting a **Spring Pin** from one hole to another, one pair of rollers become rigid, thus enabling the operator to take off a thin piece from one side.

The Arbor and its **Boxes** are adjustable to and from the rolls.

To remove the saw it is only necessary to loosen two bolts, releasing a part of the table, which may then be removed.

Siding may also be done on this machine. **The Feed Works** are so hung, that, were the machine set for splitting any thickness of stuff in the center, after tilting the feed works (by means of a screw) to a stop, and drawing the rolls together, simultaneously, the machine would be properly set for doing ordinary siding.

There is no Counter-Shaft belonging to this machine. The Feed Belt should be 8 feet $1\frac{1}{2}$ long, and 3 inches wide.

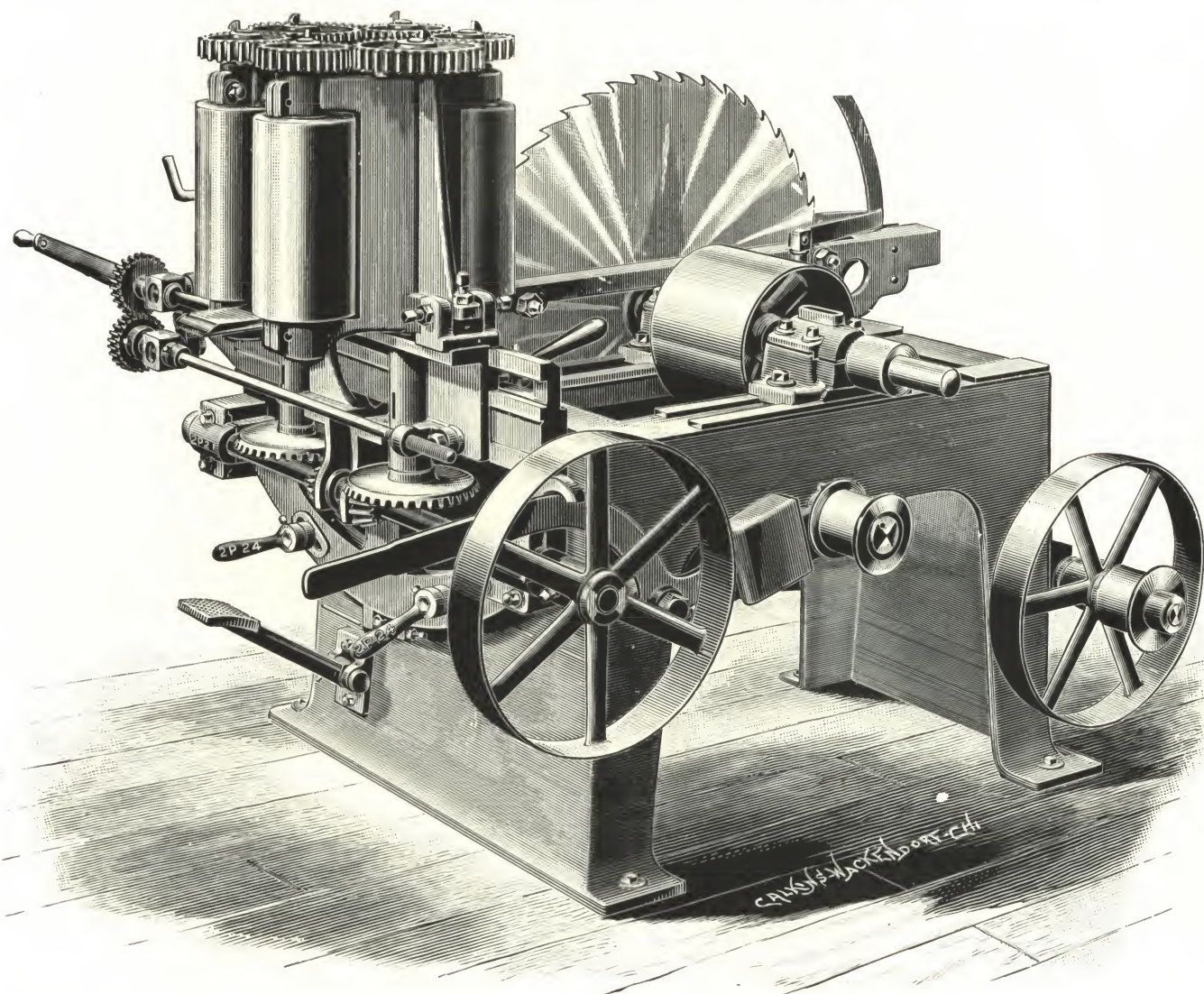
SIZE.	Pulley on Arbor.	Revs. per Minute.	Weight.	Code Word.
Fig. 245—No. 7, 38-inch Re-Saw.....	14 x 8	1,100 to 1,200	2,100	Kilted.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 246.

HOYT & BROTHER CO.'S

No. 6, Improved Circular Re-Sawing Machine.



FOR WIDE BOARDS.

THIS Re-Saw carries a 32-inch **Taper Ground Saw**, and will split lumber 12 inches wide and 8 inches thick.

It is a very simple, strong machine. Has four **Feed Rolls**, six inches in diameter, twelve inches high, all strongly geared, their pressure being given by a weight. One pair may be rigidly locked.

A Treadle enables one to instantly open the rolls, for the removal of work, should it become necessary.

The Feed may be started or stopped at will.

Siding may also be done on this machine. To make the change, loosen two handles, and tilt rolls by means of a screw to a stop, which will give the required bevel.

The Arbor and its boxes are adjustable to and from the **Rolls**.

To remove the saw, it is only necessary to loosen two bolts, releasing a part of the table, which may then be removed.

An Under Jointer or a Double Jointer Rig may be used on this Re-Saw, although when used it will only carry a 24-inch saw.

Belting Required: For Feed, 18 feet 6 inches, of 2½ inch; for Under Jointer, 5 feet, of 3½ inch; for Double Jointer, 8 feet 6 inches, of 4 inch.

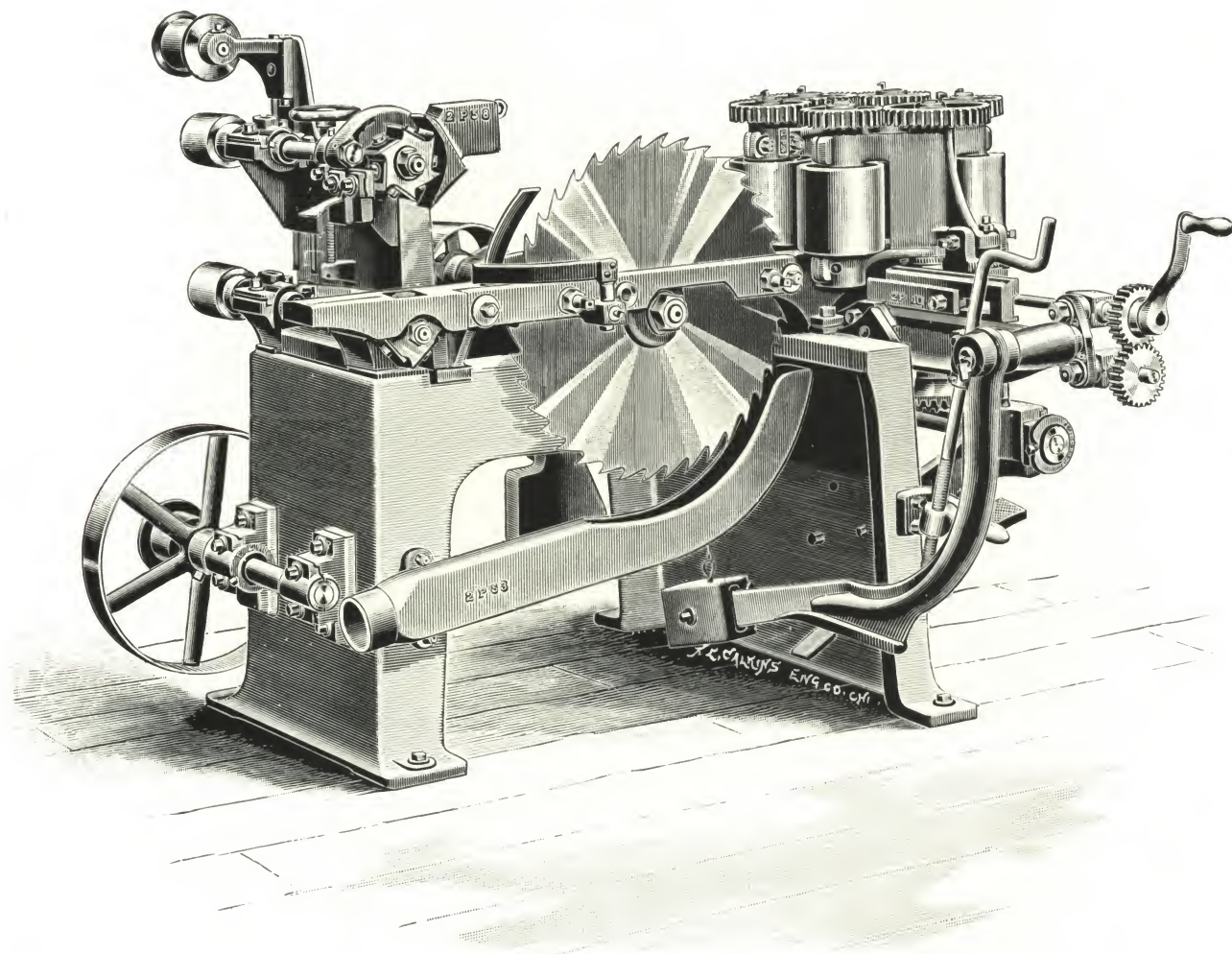
SIZE.	Pulleys on Arbor.	Revs. per Minute.	Weight.	Code Word.
Fig. 246 —32-inch Re-Saw, with Double Jointers	10 x 8	{ 1,400 to 1,600 }	1,800	Kindle.
Fig. 246 A—32-inch Re-Saw, with Under Jointer	10 x 8		1,800	Kindred.
Fig. 246 B—32-inch Re-Saw, without Jointers.....	10 x 8		1,800	Kingdom.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 247.

HOYT & BROTHER CO.'S

No. 5, Improved Circular Re-Sawing Machine.



THIS cut represents our **Double Jointer Siding Re-Saw**, or our No. 4, with the **Double Jointer attachment**. It is a very useful machine when one wishes to dress siding on a surfacer, thereby relieving their matchers.

Has four **Feed Rolls**, all strongly geared, their pressure being given by a weight. These rolls will open eight inches. One pair may be rigidly locked.

A **Treadle** instantly opens the rolls, for the removal of work, should it become necessary.

The Feed may be started or stopped at will.

To set for **Siding**, loosen two **Handles** and tilt rolls by means of a screw to a stop, which gives you the required bevel.

The Arbor and its Boxes are adjustable to and from the rolls, and carry a **24-inch Taper Ground Saw**.

To remove the saw it is only necessary to loosen two bolts, releasing a part of the table, which may then be removed.

Belting Required: For Feed, 18 feet 6 inches of 2½-inch ; for Double Jointer, 8 feet 6 inches of 4-inch.

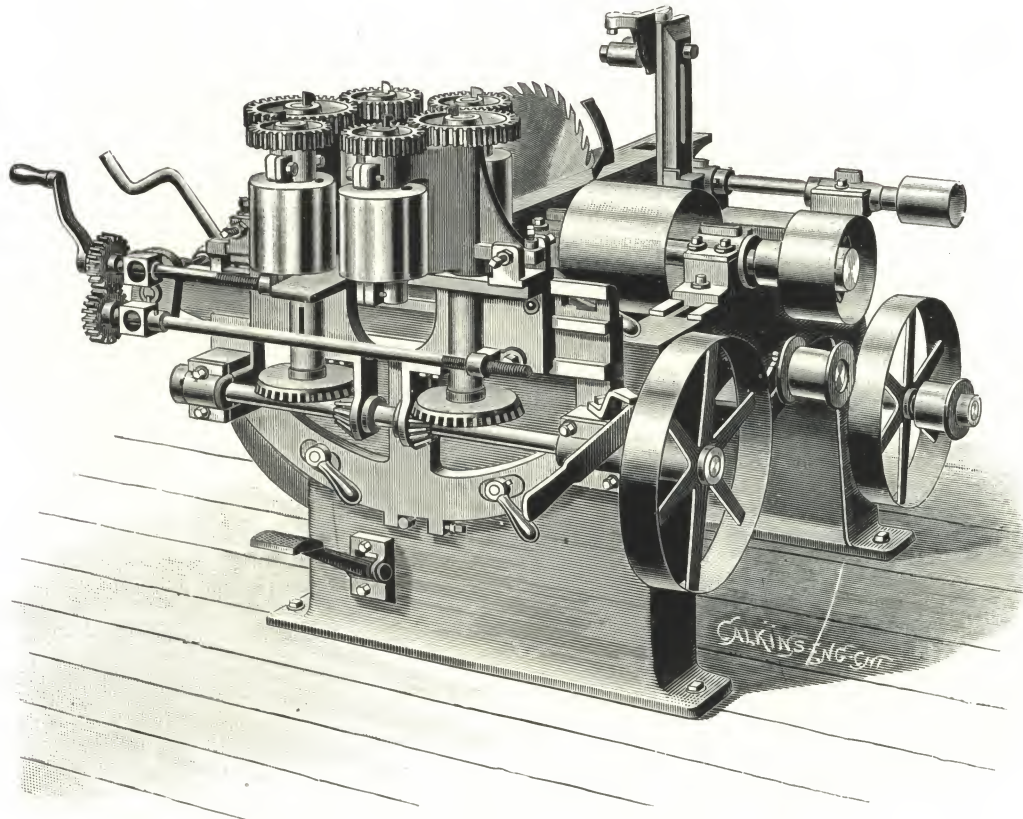
SIZE.	Pulley on Arbor.	Revs. per Minute.	Weight.	Code Word.
Fig. 247—24-inch Re-Saw, with Double Jointer Attachment.....	10 x 8	2,000 to 2,200	1,850	Kingless.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 248 A.

HOYT & BROTHER CO.'S

No. 4, Improved Circular Re-Sawing Machine.



THIS cut represents our **Siding Re-Saw**. It is a simple, strong and effective machine. Has four **Feed Rolls**, all strongly geared, their pressure being given by a weight. These rolls will open eight inches. One pair may be rigidly locked.

A **Treadle** enables one to instantly open the rolls for the removal of work, should it become necessary.

The **Feed** may be started or stopped at will.

To set for **Siding**, loosen two **Handles**, and tilt **Rolls** by means of a **Screw** to a **Stop**, which gives the required bevel.

The **Arbor and its Boxes** are adjustable to and from the rolls, and carry a **24-inch Taper Ground Saw**.

To remove the saw it is only necessary to loosen two bolts, releasing a part of the table, which may then be removed.

The **Under Jointer** and its pressure, shown in cut, does not necessarily go with the machine, but is very complete in its arrangement.

A **Double Jointer Attachment** can also be applied, which will joint both edges of material from three to six inches wide.

Belting Required : For Feed, 18 feet 6 inches of 2½-inch ; for Under Jointer, 5 feet of 3½-inch ; for Double Jointer, 8 feet 6 inches of 4-inch.

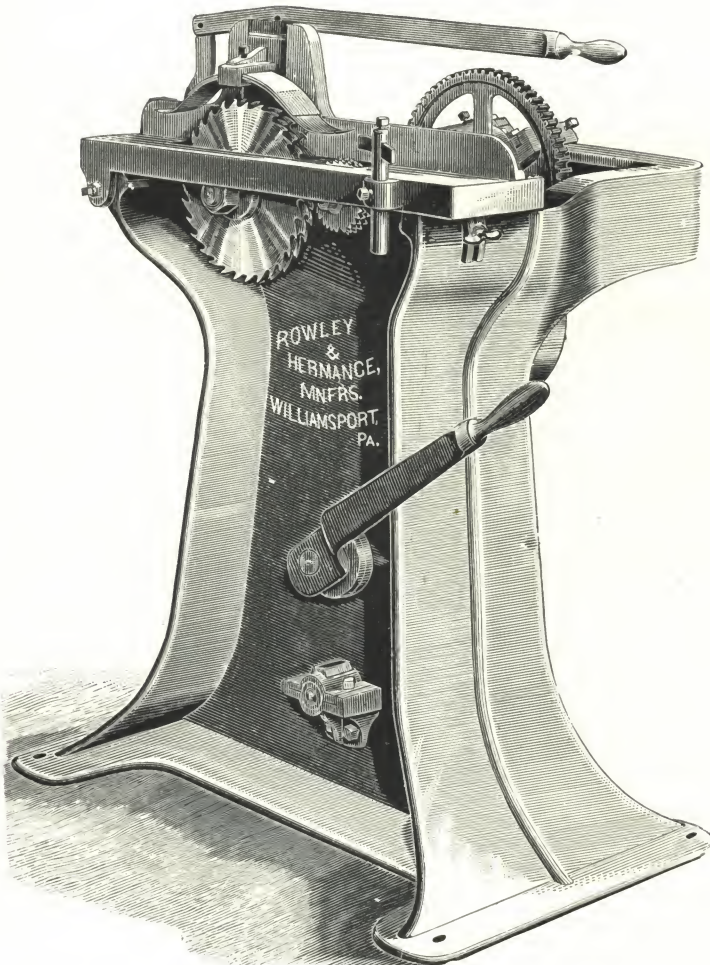
SIZE.	Pulley on Arbor.	Revs. per Minute.	Weight.	Code Word.
Fig. 248 —24-inch Re-Saw, without Jointers.....	10 x 8	2,000	1,600	Kinsfolk.
Fig. 248 A—24-inch Re-Saw, with Under Jointers..	10 x 8	to 2,200	1,600	Kinsman.

AMERICAN WOOD-WORKING MACHINE CO.

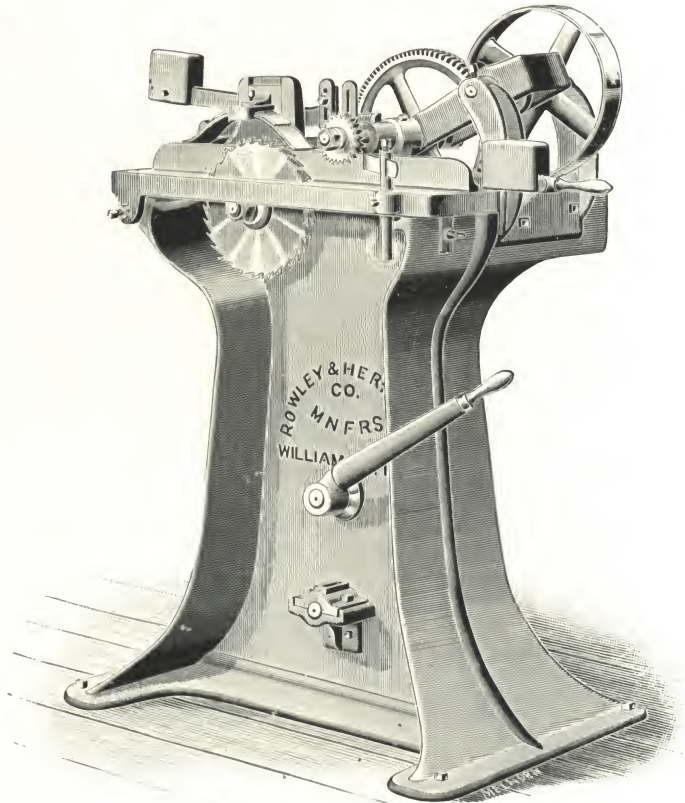
Figs. 249 and 250.

ROWLEY & HERMANCO CO.'S

Blind Slat Re-Sawing Machines.



No. 1 Machine, with Under Feed.



No. 2 Machine, with Top Feed.

THIS machine is designed for sawing blind slats, small mouldings, trunk slats, etc., etc.

The Frame is very heavy and is cast in one piece, having the arbor carrying the saws, table and feed works nicely fitted to it, and all sufficiently strong to meet the requirements of a machine of this class. It has a bearing on outside of driving pulley.

The Feed Works are very powerful, and will feed from 30 to 50 feet per minute.

The No. 1 Machine is constructed with the spur feed roll placed in the table, while the **No. 2 Machine** has the spur feed roll placed on top, as shown in cut. Either style of feed will be furnished as ordered.

The Stuff is held down by an adjustable spring, which also forms a shield over the saws, and is adjustable to the thickness of stock being sawed.

The Iron Strips between the saws are adjustable, and by using extra collars, different thicknesses of stuff can be sawed.

The Feeding Spurs, (same thickness of saws) are arranged to run directly in front of saws. A small boy of 12 years or upwards can feed it, thus saving more expensive help. The machine can be furnished with either two or three 10-inch saws, as ordered.

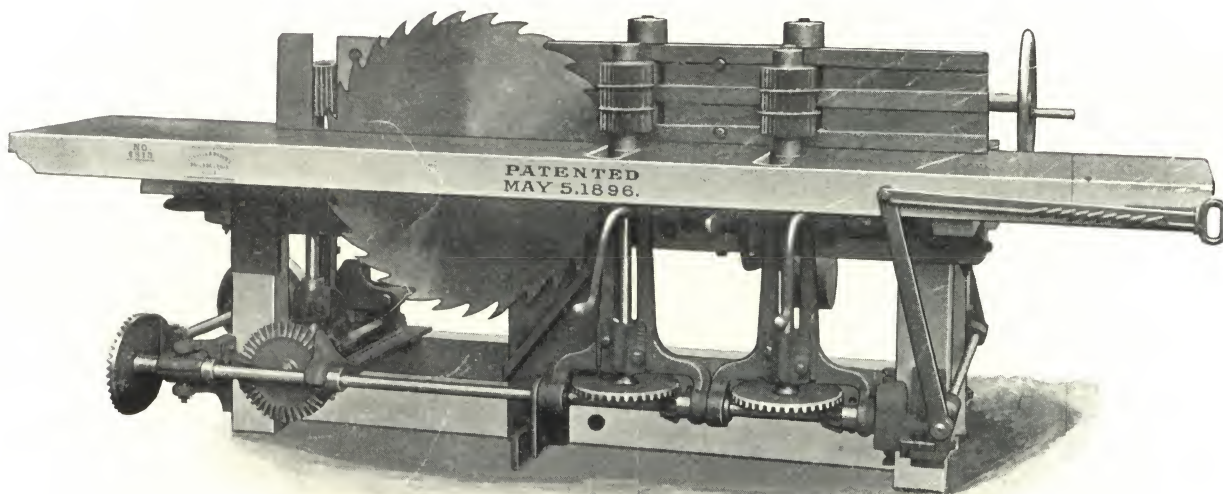
STYLE.	Pulley on Arbor.	Revs. per Minute.	Floor Space Required.	H. P. Required.	Weight.	Code Word.
Fig. 249 —No. 1, with three Saws.....	5 x 5	3,500	3½ x 2½	1 to 2	650	Kissing.
Fig. 249 A—No. 1, with two Saws.....	5 x 5	3,500	3½ x 2½	1 to 2	650	Kitchen.
Fig. 250 —No. 2, with three Saws.....	5 x 5	3,500	3½ x 2½	1 to 2	650	Kitten.
Fig. 250 A—No. 2, with two saws.....	5 x 5	3,500	3½ x 2½	1 to 2	650	Knack.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 251.

GOODELL & WATERS'

Power Feed Slab and Universal Re-Saw.



Patented May 5, 1896.

THIS is a thoroughly practical, strong, simple and inexpensive machine, intended for re-sawing planks, boards, slabs and also short, small logs (12 inches and under diameter) into any desired size, also veneers, picture and looking-glass backing. It is made in two sizes.

The No. 1 Machine, as shown in cut, has a 32-inch saw for sawing any width up to 13 inches, adapted for re-sawing ordinary sized slabs, boards and planks.

The No. 2 Machine is for heavier and wider stock up to 16 inches wide, and has an extra pressure roll to hold the upper edge of stock close to the fence or guide. This machine has a thin 40-inch flanged saw, exclusively for sawing thin stock. This saw can be removed and an ordinary one substituted for slabs and coarse lumber.

The Feed consists of two fluted rolls in front of the saw, for plank and boards, and a fluted roll beyond the saw to assist in feeding out the material. An additional set of rolls having large saw-tooth points for slabs, etc., is also furnished.

The Feed Rolls yield 6 inches from the line of the saw and have two rates of feed, 30 or 60 feet a minute.

Both machines will saw any length and any thickness up to 6 inches, the thickness being regulated by a hand-wheel shown in the cut, each turn of which moves the guide $\frac{1}{8}$ of an inch.

Every part and piece of the machine has a number stamped or cast upon it so that by simply giving the number of the machine and the number on the part wanted, duplicates can be readily ordered by wire or by mail.

Descriptive circular, giving further details, will be mailed upon application.

SIZE.	Pulley on Arbor.	Revs. per Minute.	Weight.	Code Word.
Fig. 251 —No. 1 Machine, to cut 13 inches wide.....	12 x 10	1,100	2,200	Label.
Fig. 251 A—No. 2 Machine, to cut 16 inches wide.....	18 x 9	800	2,300	Labrose.

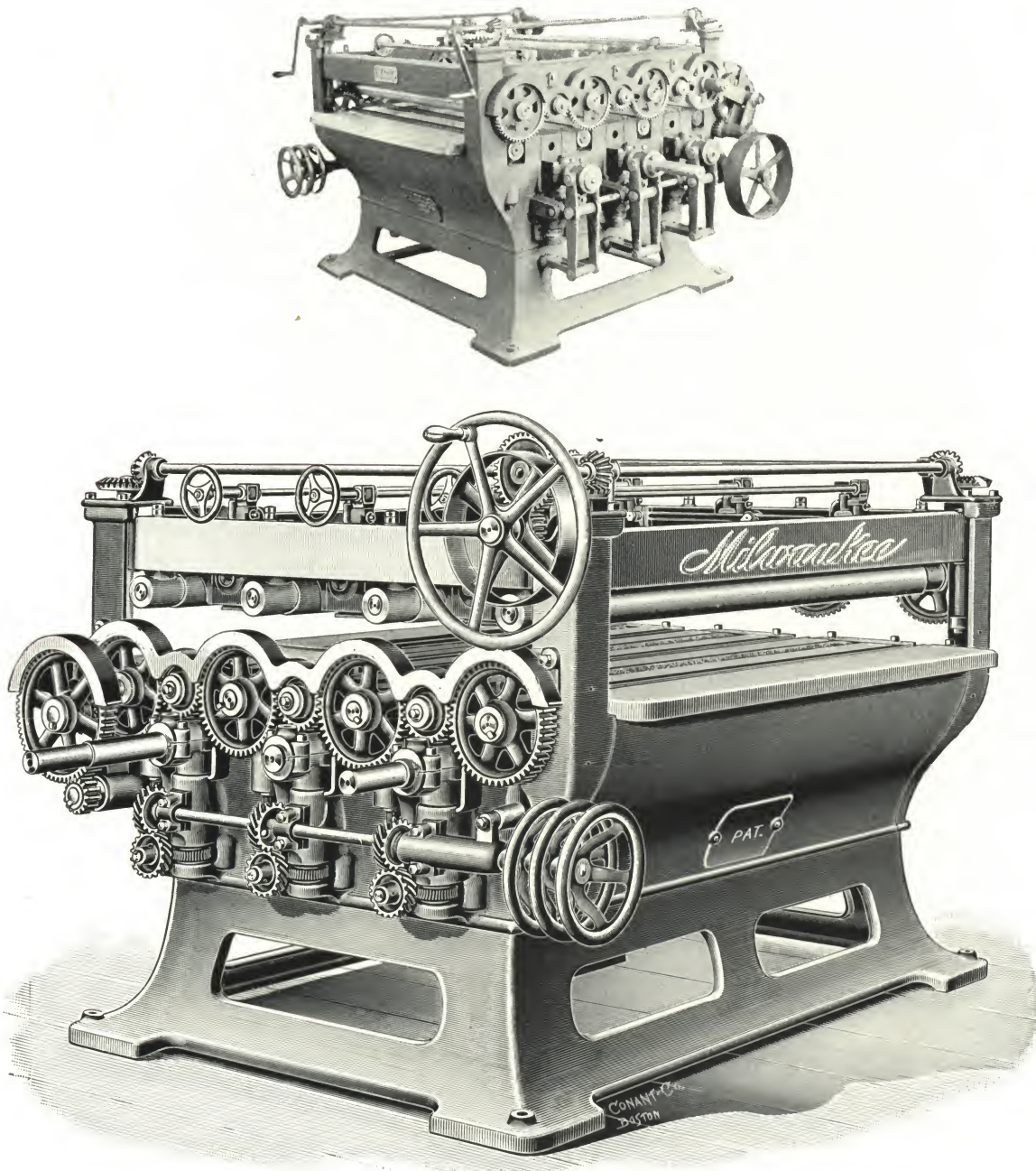
AMERICAN WOOD-WORKING MACHINE CO.

See Opposite Page for Description.

Fig. 252.

MILWAUKEE SANDER MFG. CO.'S

"Milwaukee" Eight-Roll Triple Drum Sander.



Patented January 20, 1891, February 29, 1892, August 28, 1894, September 4, 1894.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 252.

MILWAUKEE SANDER MFG. CO.'S

"Milwaukee" Eight-Roll Triple Drum Sander.

THE "MILWAUKEE" SANDER illustrated on opposite page is massive and compact, although in no wise cramped for space where room is needed. The necessary adjustments are all easy of access and convenient to make. No working parts, except cylinders, inside the frame.

The **Cylinders** are the vital part of every sanding machine, and no matter how perfect all the other parts of such a machine work, or how prepossessing the same may be in appearance, if the sand-cylinders are not perfect the whole machine is defective. It is on this particular part that we claim superiority over every other sanding machine made.

The **Cylinders** of the "Milwaukee" are provided with an **Automatic Paper Tightener**, a device by which any slack in sand-paper, whether caused by work or dampness, is automatically taken up the moment it appears, while machine is running or idle. The effect of this device is a continually even tension of the paper on the periphery of the cylinders at all times and under all conditions. It is obvious that with such equal tension all parts of the paper cut alike, that the work must be uniform, and that the paper will wear uniformly and not through on certain spots while others are not yet touched.

The treatment of the **Surface of the Cylinders** is also of the highest importance. The old method of thick, soft padding resulted in round ends and edges, as well as an uneven surface, because from the great elasticity of the cushion the soft parts of the grain were cut out deeper than the hard ones, thus giving the work a mottled appearance. We have, therefore, discarded the old method and use only a covering of a hard grade of canvas duck on first and second cylinders, and a light felt for the third or polishing cylinder. Thus the two cutting cylinders are left practically as hard as the iron surface itself, in consequence of which the surface produced is absolutely straight and even, leaving all edges and ends absolutely sharp.

Each **Cylinder**, moreover, is made of one piece of casting, hence they are very stiff and not subject to tremble; they are finished on a grinding machine while running at full speed, therefore absolutely true.

The combination of **Automatic Paper Tightener** with hard surfaces ground to a mathematically true shape make our cylinders as perfect as mechanical means can do it.

We desire to call attention to our **Oscillator**, which comes next in importance. It moves in a straight line in a plane running through the axis of the cylinder shaft, thus avoiding all lifting up or pulling down.

The device for **regulating the cut** is another neat and practical feature. It operates instantly, even while machine is running, and is exceedingly convenient.

The **general mechanical construction** throughout is the best that skill can produce, every detail even to the minutest part has been studied with great care, hence we are prepared to give an iron-clad guarantee for strength, workmanship and high grade work.

The machines are made in sizes ranging from 24 to 60 inches wide, to work up to 4 inches thick.

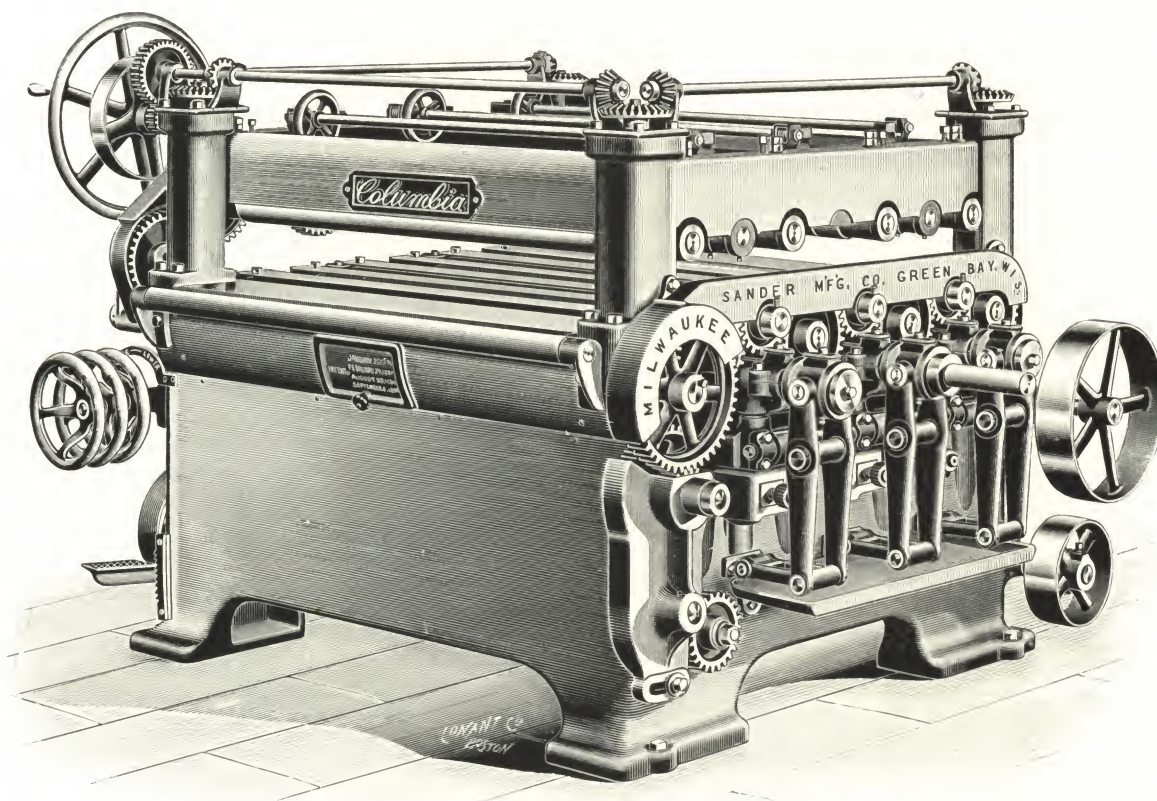
SIZE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Floor Space.	Code Word.
Fig. 252 —24 inches wide.....	12 x 8½	500	5,200	4 ft. 10 in. by 5 ft. 8 in.	Laceman.
Fig. 252 A—30 inches wide.....	12 x 8½	500	5,600	4 ft. 10 in. by 6 ft. 2 in.	Lacerate.
Fig. 252 B—36 inches wide.....	14 x 10½	500	6,000	4 ft. 10 in. by 6 ft. 8 in.	Lackey.
Fig. 252 C—42 inches wide.....	14 x 10½	500	6,400	4 ft. 10 in. by 7 ft. 2 in.	Laconic.
Fig. 252 D—48 inches wide.....	14 x 10½	500	7,300	5 ft. 4 in. by 8 ft.	Lacteal.
Fig. 252 E—54 inches wide.....	18 x 10½	500	8,000	5 ft. 4 in. by 8 ft. 6 in.	Ladder.
Fig. 252 F—60 inches wide.....	18 x 12½	500	8,800	5 ft. 4 in. by 9 ft.	Ladify.

See Opposite Page for Description.

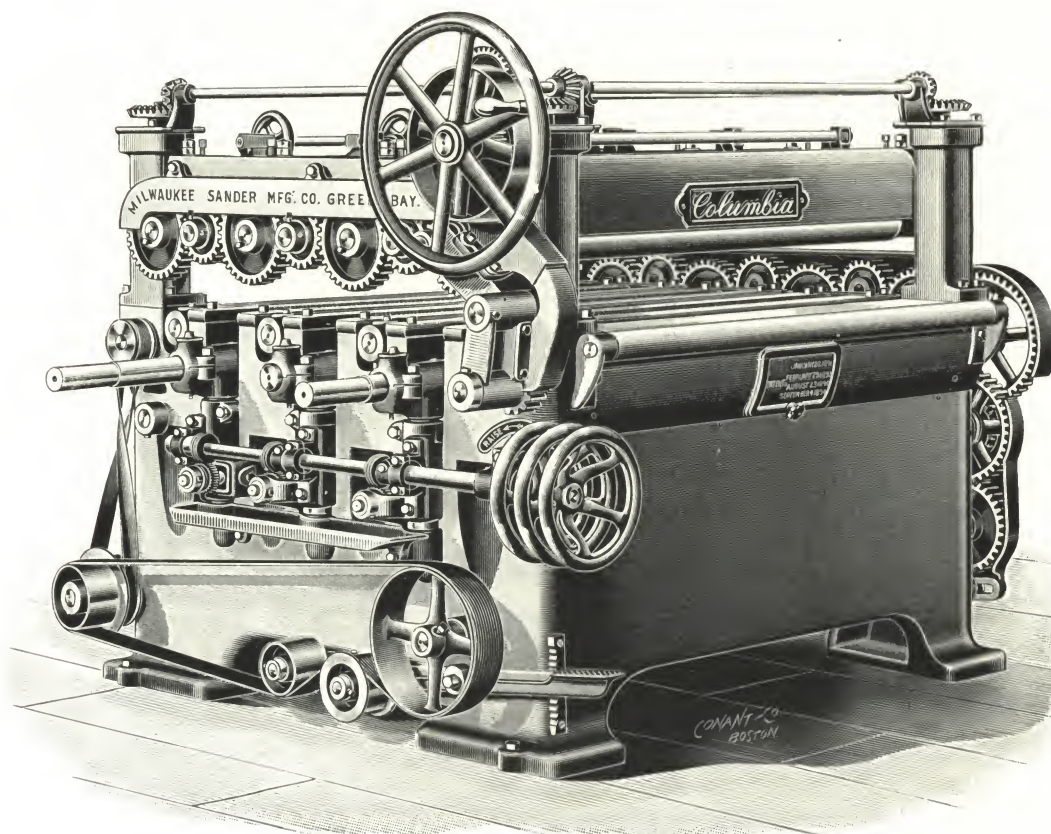
Fig. 253.

MILWAUKEE SANDER MFG. CO.'S

"Columbia" Eight-Roll Triple Drum Sander.



Right Hand View of "Columbia" Sander.



Left Hand View of "Columbia" Sander.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 253.

MILWAUKEE SANDER MFG. CO.'S

"Columbia" Eight-Roll Triple Drum Sander.

THE "COLUMBIA" SANDER is an evolution of the "Milwaukee," described on another page. While the "Milwaukee" is as much ahead of previously built sanders as electric over candle light. A four years' observation of its operations has shown us many points which could be improved. This led to the designing of the "Columbia."

The Sand Cylinders are the same as used on the "Milwaukee," with the same automatic paper tightener. Are accurately ground and have hard surfaces. They are, however, a little smaller in diameter, which insures a great many advantages. They can be more accurately balanced; can take in 30 inches sand-paper, and the distance of the feed rollers, as well as the opening of the drums, can be materially contracted.

The new features introduced into the "Columbia" are **greater weight** and increased rigidity of frame, the latter is obtained by two additional girts running obliquely from ends towards center.

Self-Oiling Boxes on cylinder shafts, oscillators and counter-shaft.

Automatic Compensation of wear on top raising screw, a feature which is of the highest importance and patented by this company. As soon as there appears back-lash in the raising screws the top feed works are lifted up where work is fed through in front, while the back end is still down, as the stock reaches the last set of feed rollers the back end is also lifted while the front end drops as soon as stock has passed front feed rollers. This causes a rocking motion which is very apt to make gauges and round ends. From this it is obvious that an automatic take-up of this back lash is a very valuable feature.

A Separate Regulation of the spring tension of every top feed roll which enables the operator to increase the spring pressure of feed rolls at his discretion.

A Separation of feed drive from oscillation which enables us to change the feed speed while keeping the speed of oscillation constant.

A Variable Speed Feed. This is a want long felt in shops where sanders are used for all purposes. It is clear that a pine base board or shelving does not need such a high finish, hence, it can be fed through the machine at least three times as fast as a veneered door, requiring the highest grade of finish. The device employed for this purpose in the "Columbia" permits change from 9 to 21 feet per minute.

We have also added an **instantaneous feed stop** and a **brush**.

The enumeration of the foregoing additions and improvements, most of which are entirely new and original, is proof that nothing has been omitted to make the "Columbia" the foremost machine of its kind.

What has been said about the **general mechanical construction**, quality of material and workmanship of the "Milwaukee," applies to this machine with equal force.

These machines are made in sizes from 30 inches to 60 inches wide, to work up to 4 inches thick.

SIZE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Floor Space.	Code Word.
Fig. 253 —30 inches wide.....	12 x 8½	600	6,500	4 ft. 10 in. by 6 ft. 4 in.	Ladylove.
Fig. 253 A—36 inches wide.....	12 x 8½	600	7,000	4 ft. 10 in. by 6 ft. 10 in.	Ladylike.
Fig. 253 B—42 inches wide.....	14 x 10½	600	7,600	4 ft. 10 in. by 7 ft. 4 in.	Ladyship.
Fig. 253 C—48 inches wide.....	14 x 10½	600	8,200	4 ft. 10 in. by 7 ft. 10 in.	Lagoon.
Fig. 253 D—54 inches wide.....	18 x 10½	600	8,800	4 ft. 10 in. by 8 ft. 4 in.	Laical.
Fig. 253 E—60 inches wide.....	18 x 10½	600	9,500	4 ft. 10 in. by 8 ft. 10 in.	Lainage.

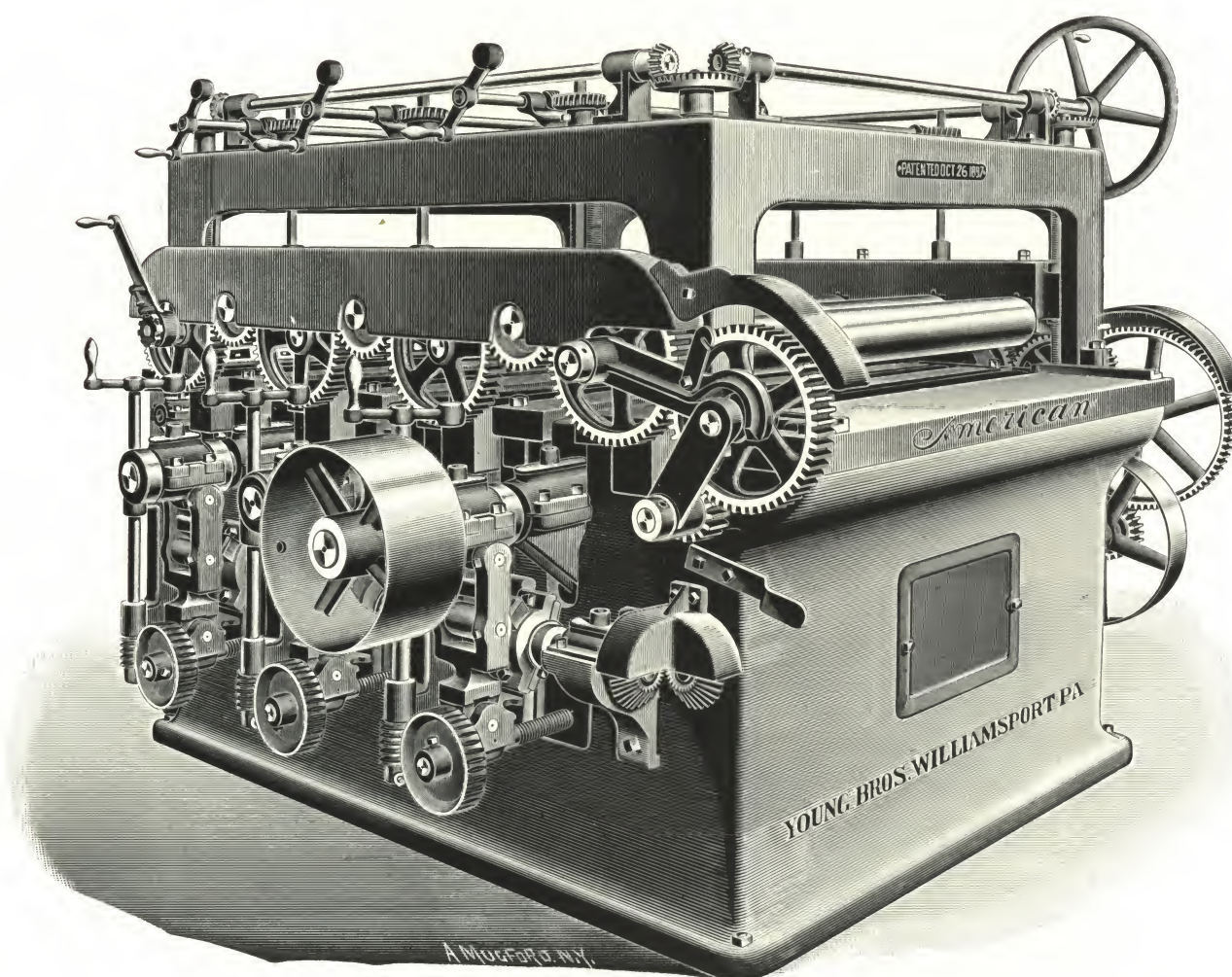
AMERICAN WOOD-WORKING MACHINE CO.

See Opposite Page for Description.

Fig. 254.

YOUNG BROS.'

Triple Drum Eight-Roll Sand-Papering Machine.



AMERICAN WOOD-WORKING MACHINE CO.

Fig. 254.

YOUNG BROS.'

Triple Drum Eight-Roll Sand-Papering Machine.

THE cut on opposite page represents our new Improved Sand-Papering Machine for sanding and polishing all plain surfaces of hard or soft wood, used in planing mills, furniture, piano, organ, wagon, car and all factories where a perfect surface is desired on wood. The machine is very heavy, and is so designed as to give it great power to resist strain from whatever point applied.

The **Frame** is cast in one piece, and the heavy girts passing through from side to side transversely are cast in the frame.

The **Sand Cylinders** are the same as those on the "Milwaukee" and "Columbia" Sanders.

The **Oscillating or Lateral Movement** imparted to the cylinders is quick and positive, and the device for performing this duty is so constructed as to reduce the friction and consequent wear to a minimum. The amount of oscillation of the cylinders is not reduced by wear of the box on the drum shaft through which the oscillation is imparted. It is only necessary to keep the thrust collars up to the box to obtain the maximum amount of oscillation. We wish to call special attention to this feature of the machine.

Three Pressure Rolls, of large diameter, are placed immediately over the three sand cylinders and serve to hold the work firmly to the table. Our new mode of removing the whole top of the machine leaves the **Sand Cylinders, Tables and Feed Rolls** entirely exposed. This is the most important improvement yet produced in machines of this class, and the advantages are obvious to any practical man. The whole top of machine, above the table, can be removed by one man with very little exertion. Time required, less than two minutes.

A **Revolving Brush** cleans the work thoroughly after it has passed the sand rolls. All parts are adjustable to compensate for wear.

This machine embodies all improvements that experience has demonstrated to be of value. A heavy steel counter-shaft is furnished with each machine.

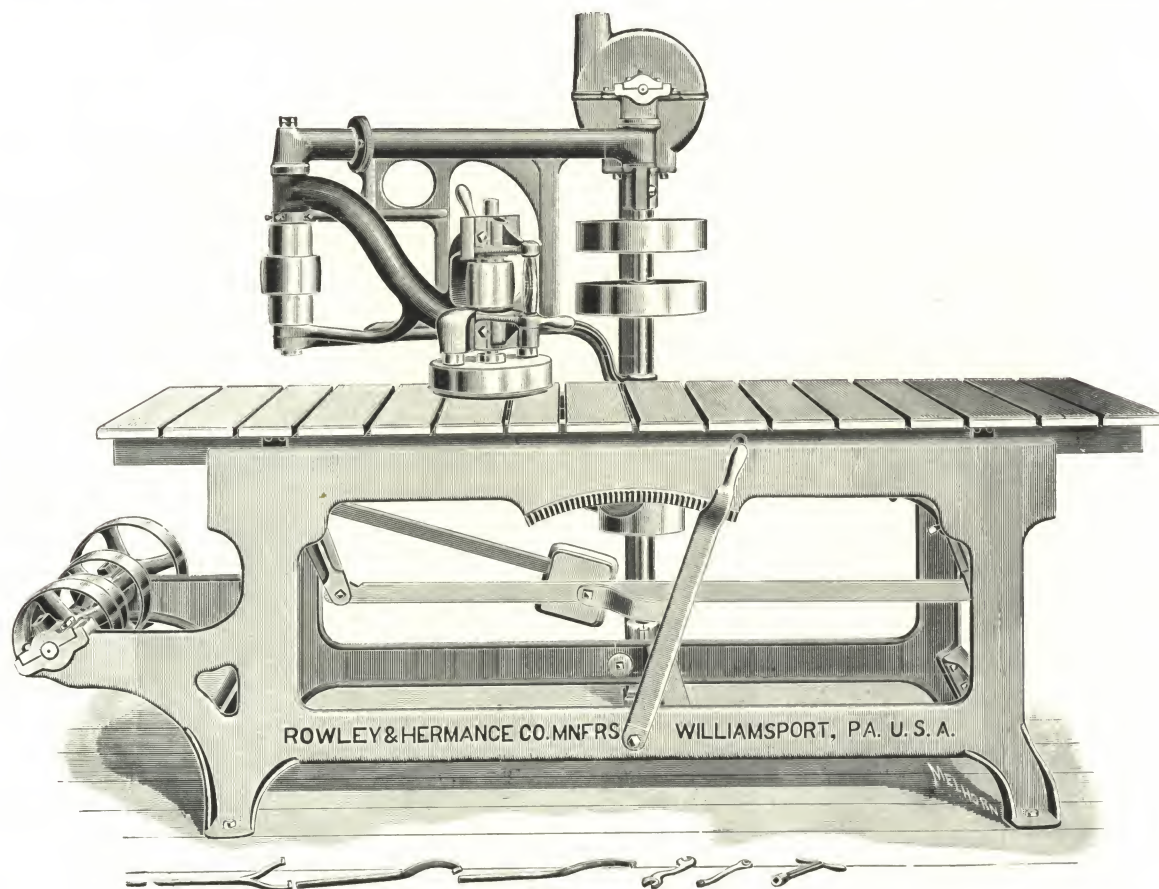
SIZE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Floor Space.	Code Word.
Fig. 254 —30 inches wide	14 x 8	550	7,400	5 ft. 3 in. by 7 ft.	Laitance.
Fig. 254 A—36 inches wide	14 x 8	550	8,200	5 ft. 3 in. by 7 ft. 6 in.	Laity.
Fig. 254 B—42 inches wide	14 x 10	550	9,400	6 ft. 8 in. by 8 ft. 2 in.	Lallation.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 255.

ROWLEY & HERMANCE CO.'S

New Improved Nichols' Patent Sand-Papering Machine.



WITH SUCTION FAN AND ADJUSTABLE TABLE.

OUR old pattern machine is so well known and has gained for itself such a wide reputation that this machine scarcely requires a description.

In the improved machine, as shown above, the hollow arms and fan have over one-half larger capacity, thus preventing the clogging up of the arms with dust.

The Belts are also longer and wider.

It is acknowledged to be the best and most efficient machine of the kind on the market for finishing and polishing **Doors, Sash, Blinds, Furniture, Piano Cases** or any flat surface requiring a perfectly smooth finish.

The Suction Fan Attachment is a great advantage, as the dust is drawn through the hollow arms into the fan, and by attaching tin pipes the dust can be deposited in any required place, keeping the surface of the work and the shop free from dust.

The advantage of getting rid of the fine flinty dust should be appreciated by all operators, as inhaling the dust into the lungs is slow but sure death to the operator.

The Table has a counter-balanced vertical adjustment, which is controlled and operated by the lever shown in front of the machine.

The machine is simple in construction and not liable to get out of order.

Those in want of a **Sand-Papering Machine** should carefully examine the advantages this has over the small, cheap machines that have no suction fan attachment. The difference in the price is not so great when the cost of making a table to raise and fall, and the difference in setting up the machine, is taken into consideration.

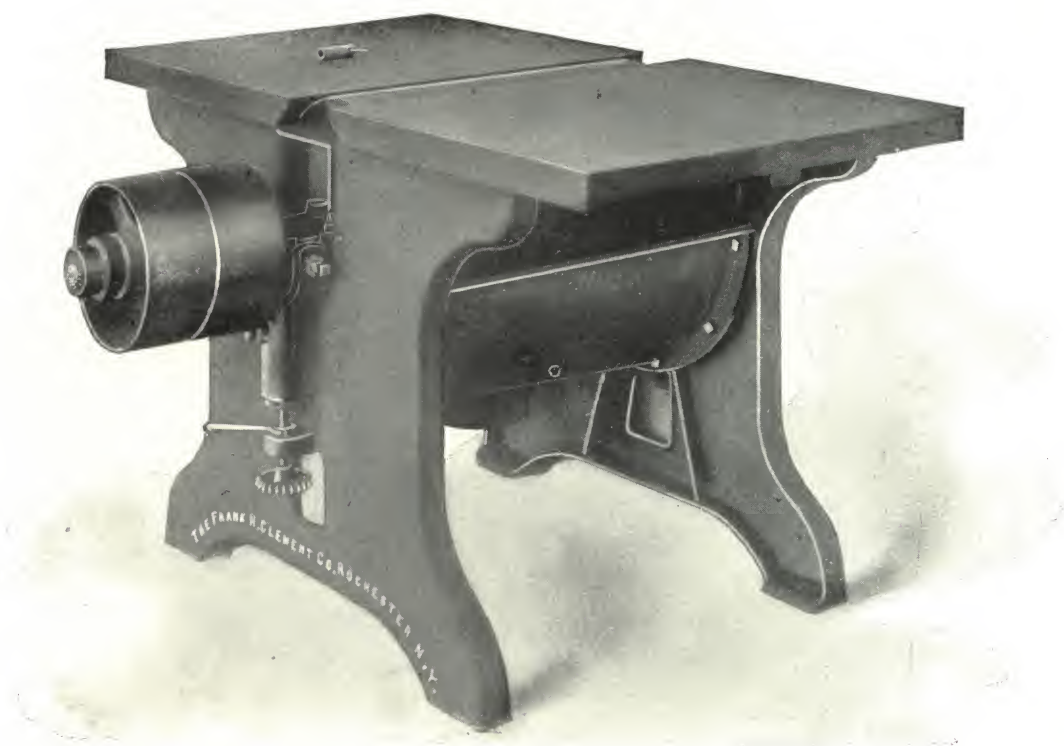
STYLE.	Tight and Loose Pulleys.	Revs. per Minute.	Cubic Measure.	Average H. P. Required.	Weight.	Code Word.
Fig. 255—Nichols' Sand-Papering Machine.....	8 x 4	600	63	1 to 2	1,250	Lamella.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 256.

F. H. CLEMENT CO.'S

Improved Surface Sanding Machine.



THE engraving shows a new and convenient drum sander with tables for surface work by hand feed. **The Frame** is unusually rigid, consisting of sides and a semi-cylindrical cross-girt, which forms a tight shell or dust box. The top of the frame is planed true to receive the tables.

The Drum is built up with iron heads and kiln-dried wood lagging, accurately turned and balanced, and hung on a steel shaft. It is covered with carpeting or felt, and ordinarily the sandpaper is moistened and stretched and lapped directly on the drum, forming a continuous sanding surface; this permits the use of the paper until it is completely worn out, much longer than if attached any other way. When wanted, we can furnish the ordinary paper fasteners, consisting of two longitudinal bars in recesses, with clamp screws.

The Main Bearings are swiveled in both directions and are adjustable vertically to bring the drum to working position.

The Tables are planed perfectly true on top and on the bottom where they rest on the frame, and are held in position by clamps and hand wheels; thus the tables can be quickly removed when it is required to use the drum on curved surfaces.

Partitions are fitted in under each table to complete the dust box at the ends, and these can be easily lifted out so as to expose fully one-half the diameter of the drum when used for curved work.

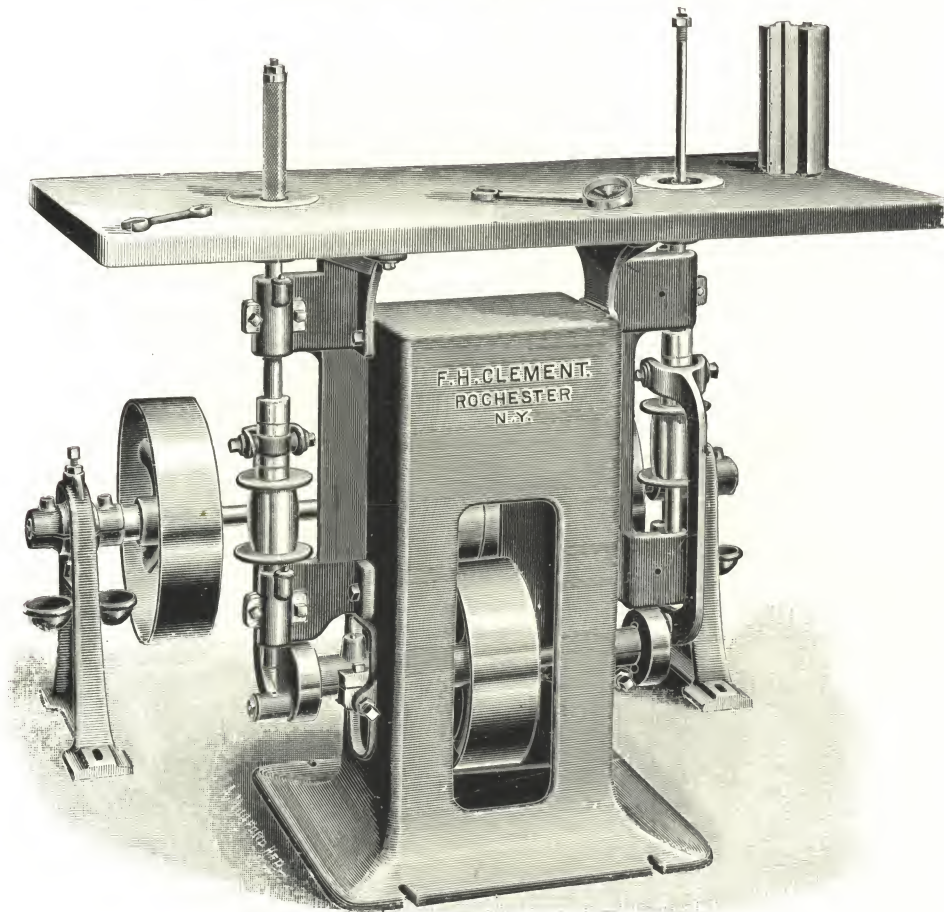
STYLE.	T. and L. Pulleys.	Revs. per Minute.	H. P. Required.	Weight.	Code Word.
Fig. 256 —Surface Sander, complete, 30 inches wide.....	10 x 4¼	600 to 800	1	1,000	Lament.
Fig. 256 A—Surface Sander, complete, 24 inches wide.....	10 x 4¼		1	900	Lamish.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 257.

F. H. CLEMENT CO.'S

No. 3, Double Spindle Sander.



Now Made With Extension Spindles and Top Steady Bearings.

THIS is an extremely useful and labor saving machine, and no wood shop can afford to be without one, particularly on such work as brackets, furniture, chairs, organs and pianos, cars, etc. On work directly from the saw, a perfectly smooth surface is produced on a great variety of shapes which have heretofore been done by hand, and the machine will easily do the work of several men and save three-quarters of the sandpaper, besides doing better work.

The Frame is cast in one piece, is heavy and rigid, and has a broad base for resisting the vibration of the cranks. The spindles have a reciprocating motion besides revolving at a high speed. The sandpaper is thus worn evenly and scratches are avoided.

The Rolls are the most satisfactory for the purpose now in use, having an elastic surface and provision for straining the paper very tight, and they are held to the spindles by a cupped washer and nut. The body is kiln-dried hard wood, and they cannot get out of center or out of true by any fair usage.

The Bearings are extra long and lined with fine babbit metal, with ample oiling arrangements. The oil cups have covers to prevent access of dust and sand.

The Spindles are of steel with brass friction collars on the pitman sleeve, and the top sections are made detachable from the body, so that when necessary, very small sections may be used.

Iron Center Plates made detachable from the table, surround the spindles and they are bored to match the rolls.

Rolls up to 4 inches diameter may be used and two are furnished with each machine, usually 1½ and 3 inches diameter and 7½ inches long, taking ordinary sheet sand-paper. Other sizes are furnished to order.

The Counter-Shaft is arranged to drive both spindles and the crank shaft, and has 8 x 4¼ tight and self-oiling loose pulley, which should run 600 to 650 per minute. The table is usually of kiln-dried cherry, glued up in strips, but will be made of iron at an extra price.

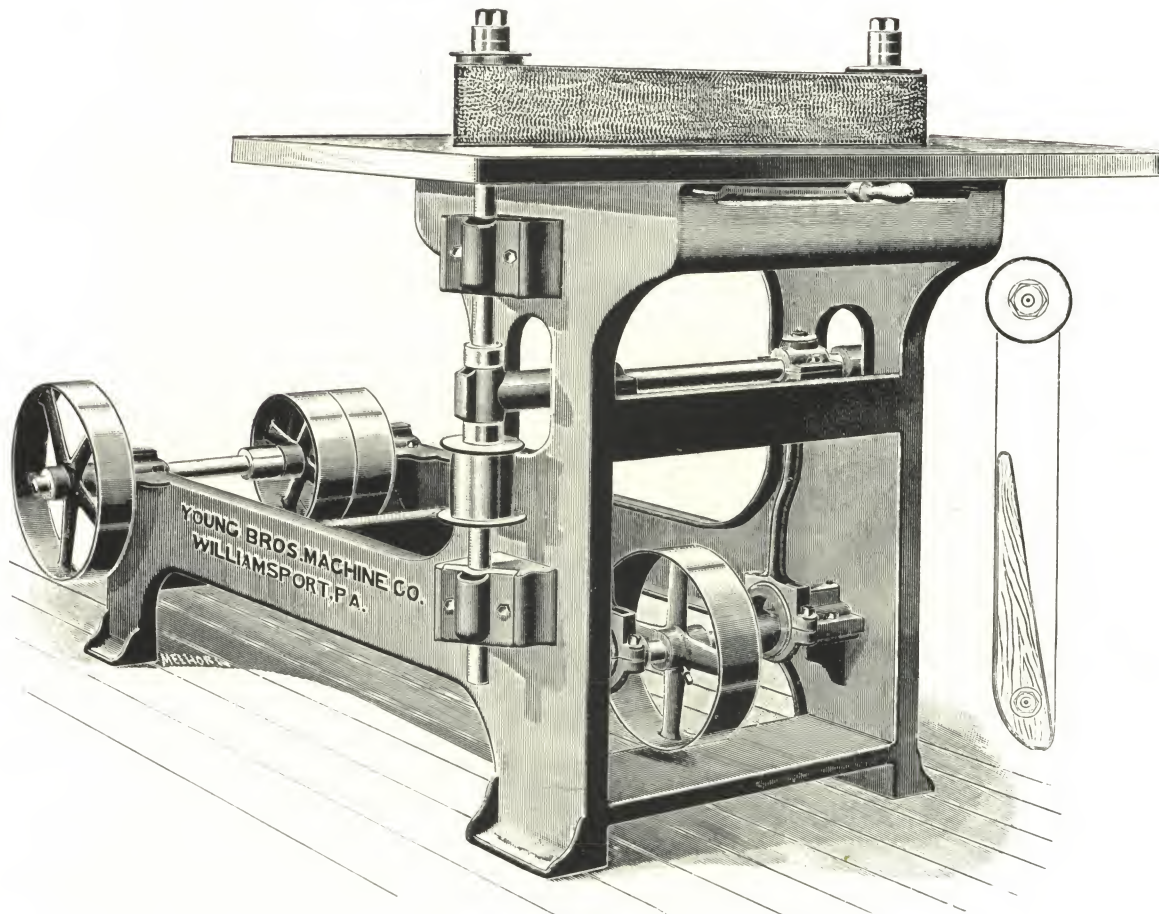
All Parts are well fitted and well proportioned, and all of the many hundreds now in use have given uniform satisfaction.

STYLE.	T. and L. Pulleys.	Revs. per Minute.	H. P. Required.	Weight.	Code Word.
Fig. 257 —Complete Iron Table and Counter-Shaft.....	8 x 4¼	650	about 1½	900	Lammas.
Fig. 257 A—Complete Wood Table and Counter-Shaft.....	8 x 4¼	650	about 1½	750	Lampate.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 258.

YOUNG BROS.' New Edge Sander.



[PATENT ALLOWED.]

THE machine illustrated above is unique in operation and a new departure in the sanding of straight and curved surfaces, all hand and scroll sawed work, swell drawer fronts, carriage work, etc.

At the left of cut is shown an upright spindle, the top of which projects through the table, and is fitted with a pulley. At the right is a short spindle fitted in a sliding block, which may be moved at will to or from the pulley. On this spindle is a form, the point of which most distant from the driving pulley being rounded, and from the point, about one-third of its length, representing an irregular curve, the balance being straight.

The Sand Belt is slipped over the pulley and form, and given the proper tension by means of the hand lever shown at front of machine. A plan of these parts is shown at the right of cut.

Both Pulley and Form are made to oscillate. When in operation the rapidly revolving pulley drives the sand belt at a high rate of speed around the form, and work held against it at any point will be rapidly cut away. By this arrangement the operator can readily find a point on the form to fit *any* curve, and inequalities from defective sawing will be *taken out* by the sand belt.

By the use of this machine correct curves and sweeps are preserved, and as the surface against which the work rests is rigid and without any vibration whatever, the result is an absolutely perfect job.

It is substantially made. **The Frame** is cast in one piece, and **the Table** is large, made of iron and planed true.

All Shafts are of steel, and only the best material is used.

Regular width of sand belt is $4\frac{1}{2}$ inches. The machine can be arranged to use wider belts at extra cost.

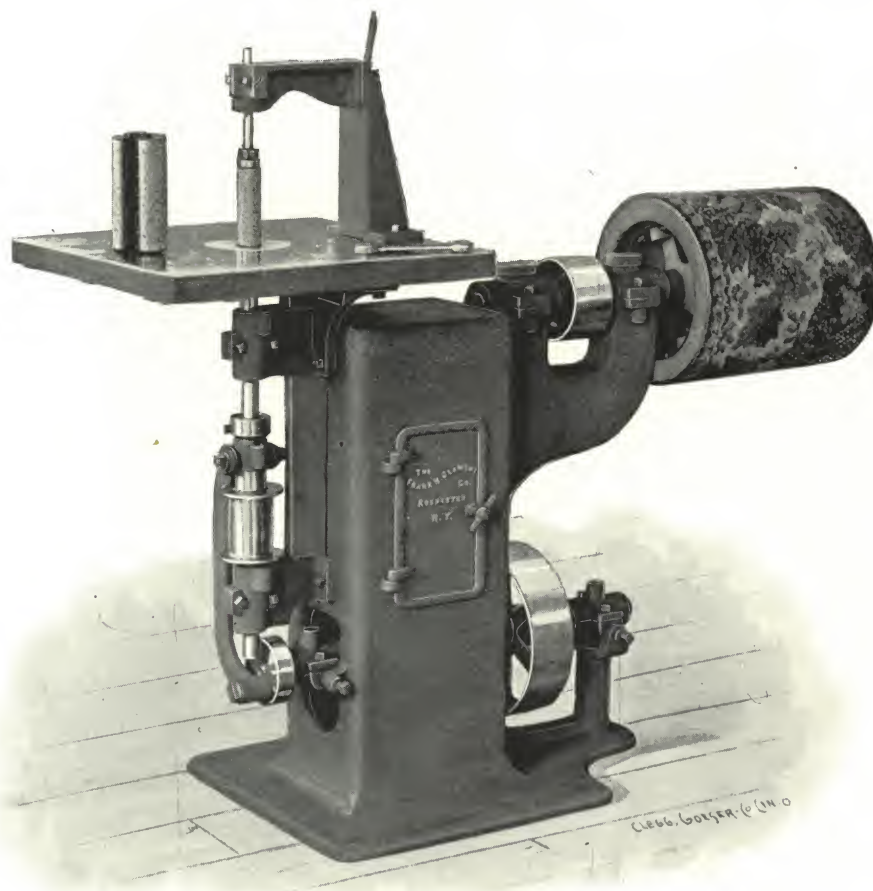
STYLE.	T. and L. Pulleys.	Revs. per Minute.	Floor Space Required.	Weight.	Code Word.
Fig. 258—New Edge Sander.....	10 x 3	500	4 ft. 3 in. by 5 ft. 6 in.	800	Lampoon.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 259.

F. H. CLEMENT CO.'S

No. 1, Spindle Sander, with Drum.



THIS is a modification of our No. 2 Universal Sander, made upon the same frame and with the same spindle and table attachment but with a drum in place of the disk.

The Frame is cast in one piece, and the machine is all iron and steel except table, which may be of iron when ordered. The vertical spindle is of steel and has a reciprocating motion (to wear the paper evenly), and is provided with a special roll, on which sandpaper is held by screwing down the nut at the top of the spindle.

A Steady Bearing is attached to the table and the box is secured by a clamp screw so as to be instantly removed when changing rolls. This adds greatly to the efficiency of the machine. The extension spindle is removable from the main arbor. The drum and roll spindle being on opposite sides of the machine, two persons can work at the same time.

The Bearings are all extra long and lined with a fine quality of metal, with extra arrangements for oiling, and the workmanship is first-class.

Rolls may be Used up to four inches in diameter, one and one-half and three inches being the sizes usually sent, and they are usually seven and one-half inches in length. There are iron rings in the table around the vertical spindle which may be changed for different sizes of rolls.

The Drum is built up on iron centers of kiln-dried wood lagging, 13 inches diameter, and is turned tapering and covered with carpeting or felt. Cylinders or shells of sandpaper made over a form are used, forced on to the drum over the end. This makes a much more satisfactory drum than when longitudinal clamp bars are used which leave gaps in the surface.

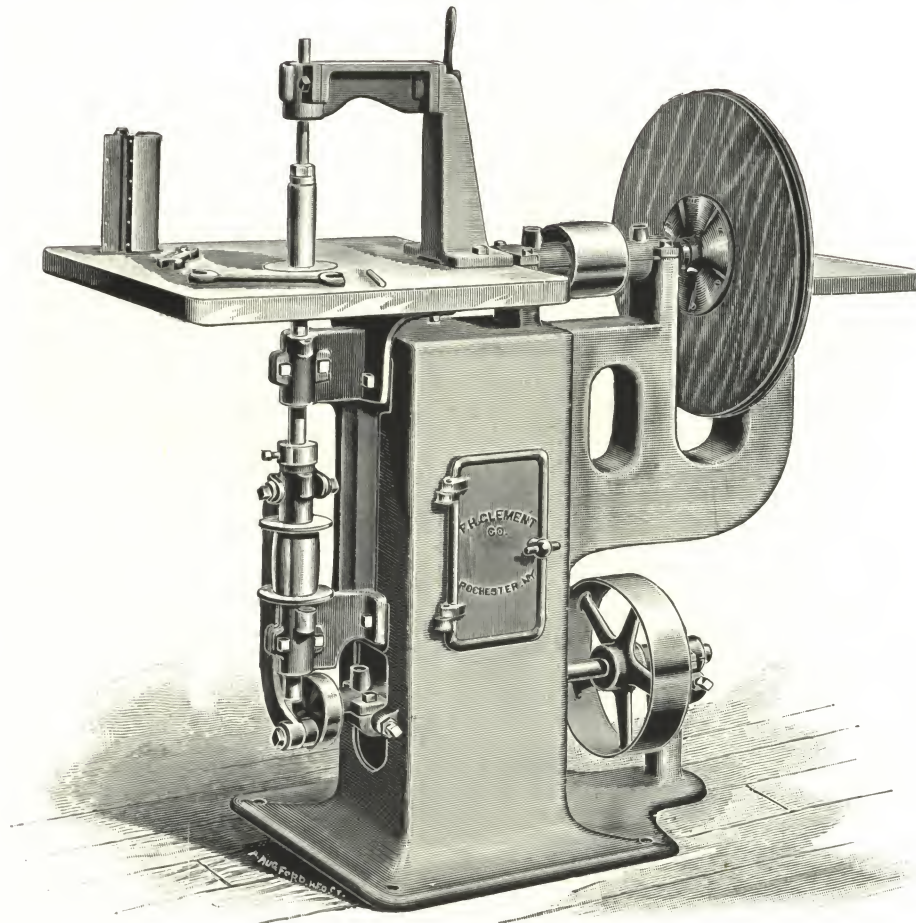
STYLE.	T. and L. Pulleys.	Revs. per Minute.	H. P. Required.	Weight.	Code Word.
Fig. 259 —Complete, with Counter and Two Rolls, Iron Table	8 x 4 1/4	750	about 1	800	Lamprey.
Fig. 259 A—Complete, with Counter and Two Rolls, Wood Table.....	8 x 4 1/4	700	about 1	700	Lancet.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 260 B.

F. H. CLEMENT CO.'S

No. 2, Universal Sand-Papering Machine.



THESE are indispensable tools for Cabinet, Chair, Bracket, Organ, Carpenter and Job Shops, for smoothing the edges of scrolls, brackets and irregular pieces of all kinds, whether wholly curved or partially straight. A perfectly smooth surface is produced, ready for filler or varnish directly from the saw, and the machine will easily do the work of four or five men and save 75 per cent. of the sandpaper over hand work, besides leaving a better and truer surface.

The Frame is cast in one piece, and the machine is all iron and steel, except tables, which may be of iron when ordered. The vertical spindle has a reciprocating motion and is provided with a special roll, on which sandpaper is held by screwing down the nut on the spindle, and the latter is extended up through a bracket bearing which is quickly detached for changing rolls.

The Disk is provided with a ring for clamping the sandpaper over the outer edge, and is usually made 26 inches in diameter. The disk and roll spindle being on opposite sides of the machine, two persons can work at the same time. The disk table can be tilted to an angle for beveled work.

The Bearings are all extra long and lined with a fine quality of metal, with extra arrangements for oiling, and the workmanship is first-class.

Rolls may be Used up to four inches in diameter, two inches being the size usually sent, and they are usually 7½ inches in length. There are iron rings in the table around the vertical spindle which may be changed for different sizes of rolls. The counter-shaft is arranged to drive all the moving parts, and has 8 x 4¼ inch pulleys, which should run 600 to 650 per minute.

Two Forms of this machine are made. No. 1, with single upright spindle and one roll; No. 2, as in the engraving, with one disk, one roll spindle, and two rolls of different sizes.

A Steady Bearing is attached to the table and its box is secured by a clamp screw so as to be readily removed.

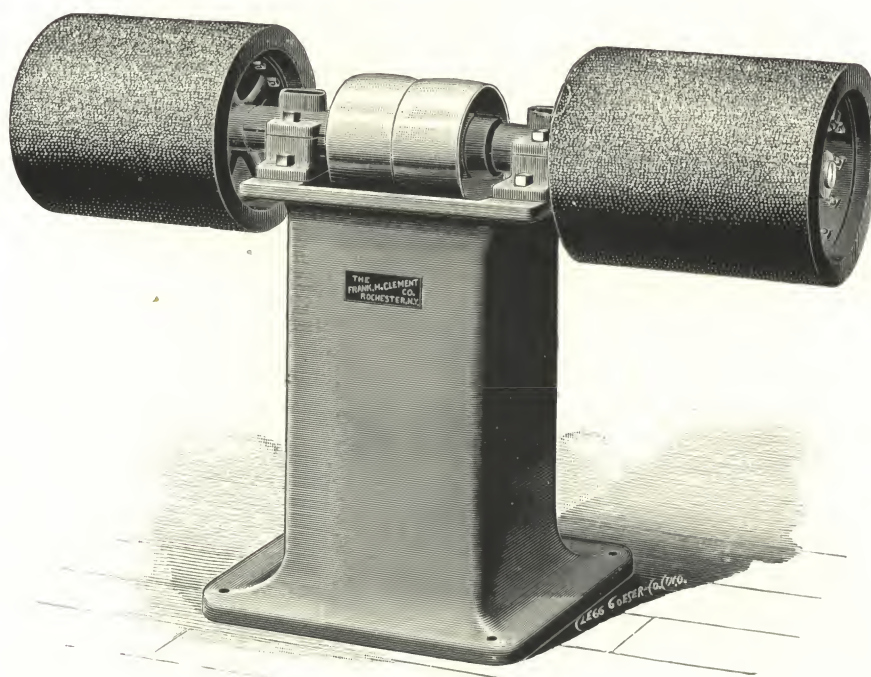
The extension spindle is also removable from the main spindle.

STYLE.	T. and L. Pulleys.	Revs. per Minute.	H. P. Required.	Weight.	Code Word.
Fig. 260 —No. 1, Complete, Iron Table.....	8 x 4¼	600	about 1½	600	Landfall.
Fig. 260 A—No. 1, Complete, Wood Table.....	8 x 4¼	600	about 1½	500	Landgrave.
Fig. 260 B—No. 2, Complete, Iron Table.....	8 x 4¼	600	about 1½	900	Landless.
Fig. 260 C—No. 2, Complete, Wood Table.....	8 x 4¼	600	about 1½	750	Landlord.

Fig. 261.

F. H. CLEMENT CO.'S

New Drum Sanding Machine.



IN response to a demand for a first-class Hand Drum Sander we have designed the machine shown in the engraving. It is an indispensable tool for chair and furniture shops, and for cleaning up bent work of many kinds.

The Drums are built up with iron centers and kiln-dried lagging, well bolted together, and covered with felt or carpet. They are usually turned a little tapering, so that endless sand-paper bands may be forced tightly over them.

The Shaft is of steel, and the boxes are four diameters in length and lined with a fine quality of babbitt.

The Frame is cast in one piece, and the boxes are bolted firmly to it, avoiding all vibration.

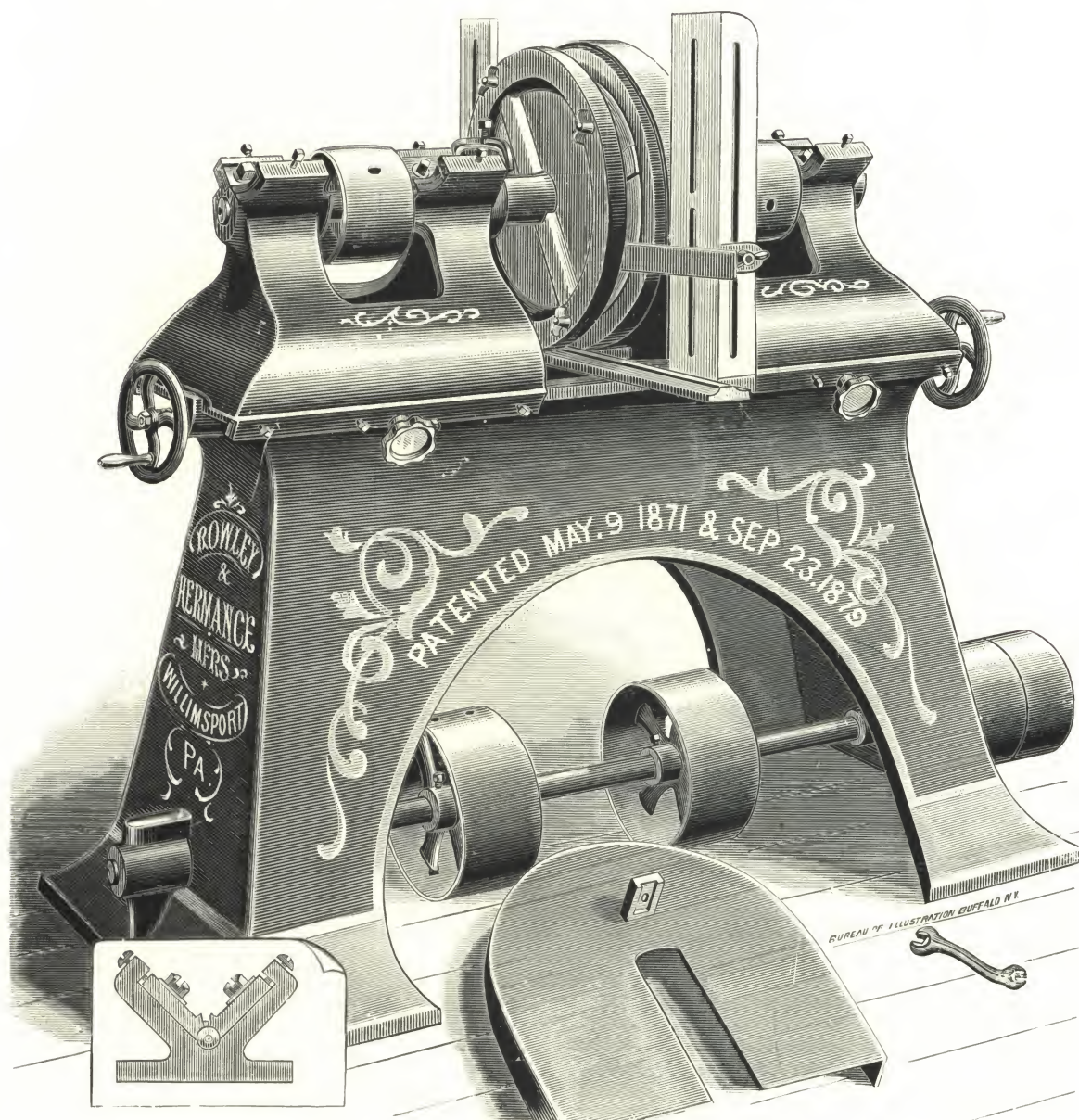
The Drums are usually 13 inches diameter and 16 inches face, but may be varied to order.

STYLE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	H. P. Required.	Code Word.
Fig. 261 —Complete, Iron Frame.....	8 x 4 ½	1,200	450	about 1	Landscape.
Fig. 261 A—Complete, Wood Frame	8 x 4 ½	1,200	300	about 1	Landsman.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 262.

ROWLEY & HERMAN, CO.'S Double Disc Sand-Papering Machine.



THE above machine is expressly intended for sandpapering one or both surfaces of **door panels, blinds, outside and inside shutters, mantels, window jambs, drawer fronts, cupboard doors, etc., etc.,** at one operation. It has **two vertical discs** running opposite to each other, one of which has a lateral motion, governed by spring, to adjust to irregularities of work.

This machine is now coming into general use in blind factories for sandpapering and finishing both sides of the blind or window shutter at one operation, doing the work better than can be done by hand. To meet this demand we now build two sizes of this machine to work **13 inches and 20 inches wide**, and from **¼-inch to 4 inches thick**.

It will sandpaper panels for 500 doors per day on both sides. The 20-inch machine will finish 200 pairs of blinds in 10 hours.

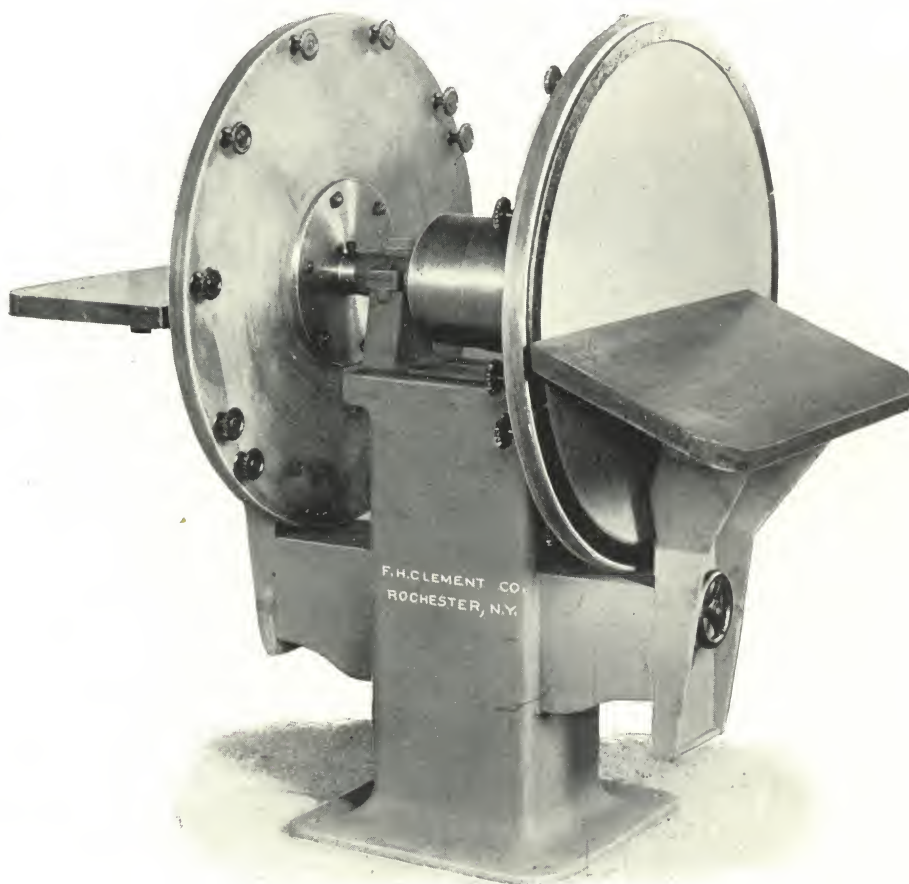
STYLE.	T. and L. Pulleys.	Revs. per Minute.	Cubic Measurement.	Approximate Weight.	Average H. P. Required.	Code Word.
Fig. 262 —Complete, with 20-inch Discs	10 x 6	730	42	1,675	1 to 2	Landward.
Fig. 262 A—Complete, with 13-inch Discs	10 x 6	730	38	1,500	1 to 2	Languid.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 263.

F. H. CLEMENT CO.'S

Double Sand Disk Machine.



WITH 30-INCH OR 36-INCH DISKS.

THIS is a new design just introduced by us and comprises all the requirements of such a tool.

The Frame is cast in one piece in box form and is rigid and heavy.

The Main Arbor is steel with long babbitted boxes and provided with our "Perfect" self-oiling loose pulley.

The Disks are glued up in three thicknesses of kiln-dried wood 30 or 36 inches diameter with the grain crossed, and the center plates are secured with bolts through and through.

The Clamp Rings lie in a "rabbet" turned in the face of the disks, and they draw the sandpaper down over a rounded shoulder without ridges or laps on the flat surface. No wrenches are required for this operation. Plain disks with outside clamping rings can be furnished if preferred at a lower price.

The Tables are usually of cherry glued up, but they may be of iron if so ordered. One of these is usually made to adjust to an angle with the disk and one is stationary; both may be adjusted vertically by slacking the clamp wheel on the bracket.

All Materials and Workmanship are first-class.

Fig. 264.

F. H. CLEMENT CO.'S

Disk and Drum Sander.

We make also on this frame, using one disk and tilting table, a combination sander with a tapering drum or drums on the end of the arbor opposite the disk, upon which endless sandpaper covers are forced similarly to our double drum sander. This is a very convenient and labor-saving machine in any wood shop.

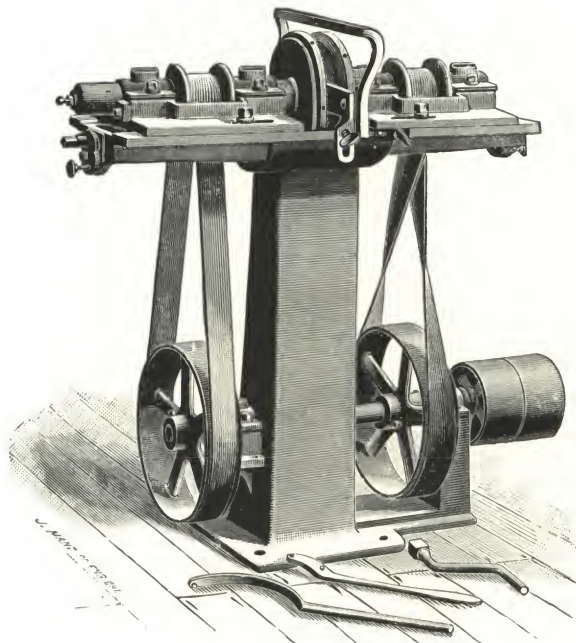
	STYLE.	T. and L. Pulleys.	Revs. per Minute.	H. P. Required.	Weight.	Code Word.
Fig. 263	—No. 1, Complete, with one Disk and one Tilting Table..	10 x 4½	450	about 2	750	Lanifce.
Fig. 263 A	—No. 2, Complete, with two Disks and two Tables	10 x 4½	450	about 2	950	Lankey.
Fig. 263 B	—Plain Disk with Outside Clamping Ring.....					Lankness.
Fig. 264	—Complete, 30-inch Disk and 13-inch Drum.....	10 x 4½	450	about 2	650	Lantern.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 265.

HOYT & BROTHER CO.'S

New Double Disk Raised Panel Sander.



IN presenting the trade with this new and perfect **Sander** for raised panels it is but necessary that we call your attention to the engraving, which is in itself as fully descriptive as anything we can say.

Notice that the pedestal and supporting arms on each side are cast in one piece; that the arbor boxes are cast in a yoke, and are themselves adjusted to or from the center; that the left hand disk is held up to the work by a coil spring in the socket, as shown, and the pressure is regulated by the set-screw in the end of socket. That it has a **gauge** to regulate depth of work, and another gauge to hold panels in line with the disks. There is a "**take-off**" on opposite side of machine, not shown in engraving, to which may be attached pipe connection with exhaust.

Fig. 266.

F. H. CLEMENT CO.'S

Patent Irregular Belt Sander.

THIS is the Latest labor-saving machine for chair, carriage and furniture works. It is capable of working out smoothly a great variety of forms on the edges at a speed as great as two or three expert bench hands, and much better, and it can be run by a bright boy. The engraving gives a good general idea of the machine, which consists of two pairs of light wooden pulleys, with clamping hubs and continuous rims covered with gum cloth. Each pair of wheels carries a canvas sand-belt, which is prepared in a peculiar way, and runs against guides placed on the table. The guides have various shapes, and those usually sent with the machine are convex and triangular on the working faces, and generally meet all requirements.

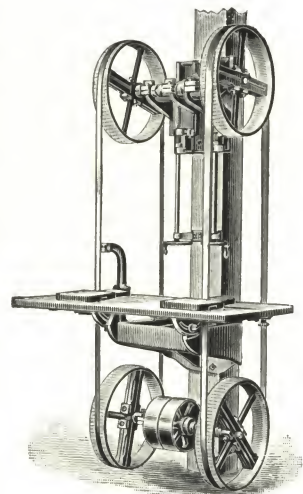
The Table is of kiln-dried cherry, and can be tilted for beveled work. On its upper surface are secured the smaller working tables, which are adjustable to the requirements of the work.

The Guides are of hardened steel, and are bolted to small iron plates or sub-tables, which are also adjustable on the surface of the main table.

The Shafts are of steel, and the upper ones run in independent boxes, and the belts are strained by independent screws. The lower shaft is usually in two sections with a slip coupling, so as to carry the tight and loose pulleys outside of the belt wheels for convenience in removing the sand belts.

Flat Belts up to 4 inches wide can also be used in the ordinary way, thus making an excellent combination sander especially adapted to chair and carriage work. We send with each machine six sand belts properly prepared, and one arch and double guide attachment, and furnish printed directions for starting and operating.

For Polishing irregular sawed edges of almost any shape it has no competitor. It will save its cost in a very short time.



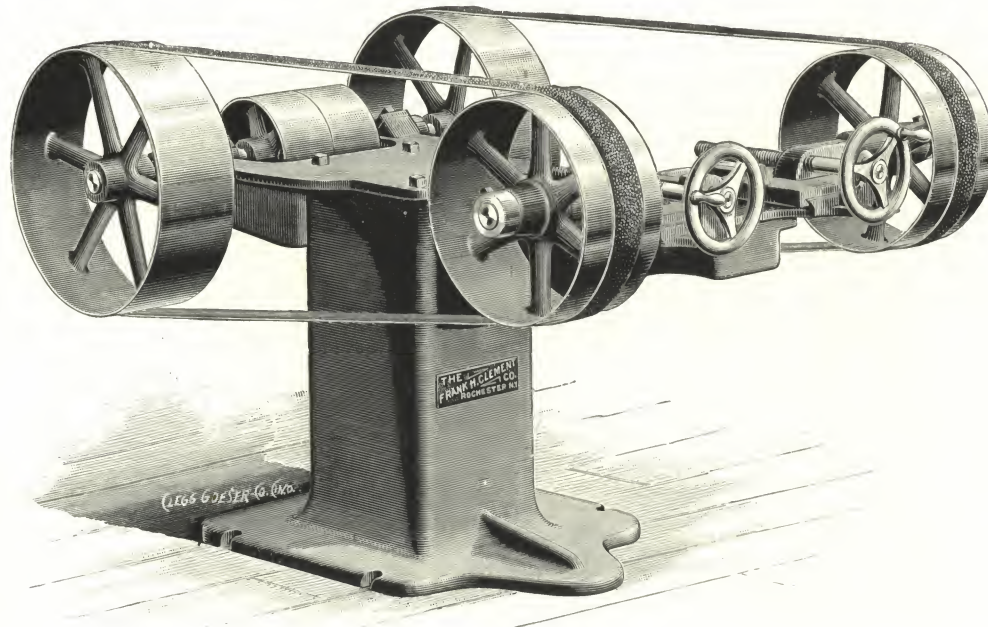
STYLE.	T. & L. Pulleys.	Revs. per Minute.	H. P. Required.	Weight.	Code Word.
Fig. 265—Complete, Double Disk Raised Panel Sander.....	6 x 3	1,100	about 2	300	Lapdog.
Fig. 266—Complete, Patent Irregular Belt Sander.....	12 x 4½	250	about 2	1,000	Lapicide.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 267.

F. H. CLEMENT CO.'S

Improved Sand Belt Machine.



THIS is a compact, convenient and very durable machine for carrying endless polishing belts, and it has become a necessity in a first-class outfit for chair or furniture work.

The Frame is in box form cast in one piece, with heavy base flange.

The Main Shaft is turned steel with bearings seven inches long, having ample oil cells.

The Straining Slides have take-up gibs and the pulleys run on studs with provision for oiling. Each belt is strained independently ; the length of the belts with the regular pulleys is eleven feet.

The Tight and Loose Pulleys are 10 x 4¼ inches and the loose pulley has our improved self-oiling attachment, of which we have several thousand in use. They should run about 1,000 per minute.

The Belt Pulleys are ordinarily 20 and 14 inches respectively in diameter, and 6-inch face. **We can make the machine with single belt when required.** Shipping weight about 650 pounds.

Fig. 268.

F. H. CLEMENT CO.'S

Double Vertical Sand Belt Machine.

This a similar machine to the one shown above except that the belts are nearly vertical and the parts are secured to a hard wood frame. The same tension try-slides, sand belt, pulleys and bearings, are used as above, and the driving shaft is located at the top of the frame so as to be conveniently belted from the line shaft. The working "run" of the sand belts lie at quite an angle from a vertical and the travel is upward. Materials and workmanship are excellent in every particular.

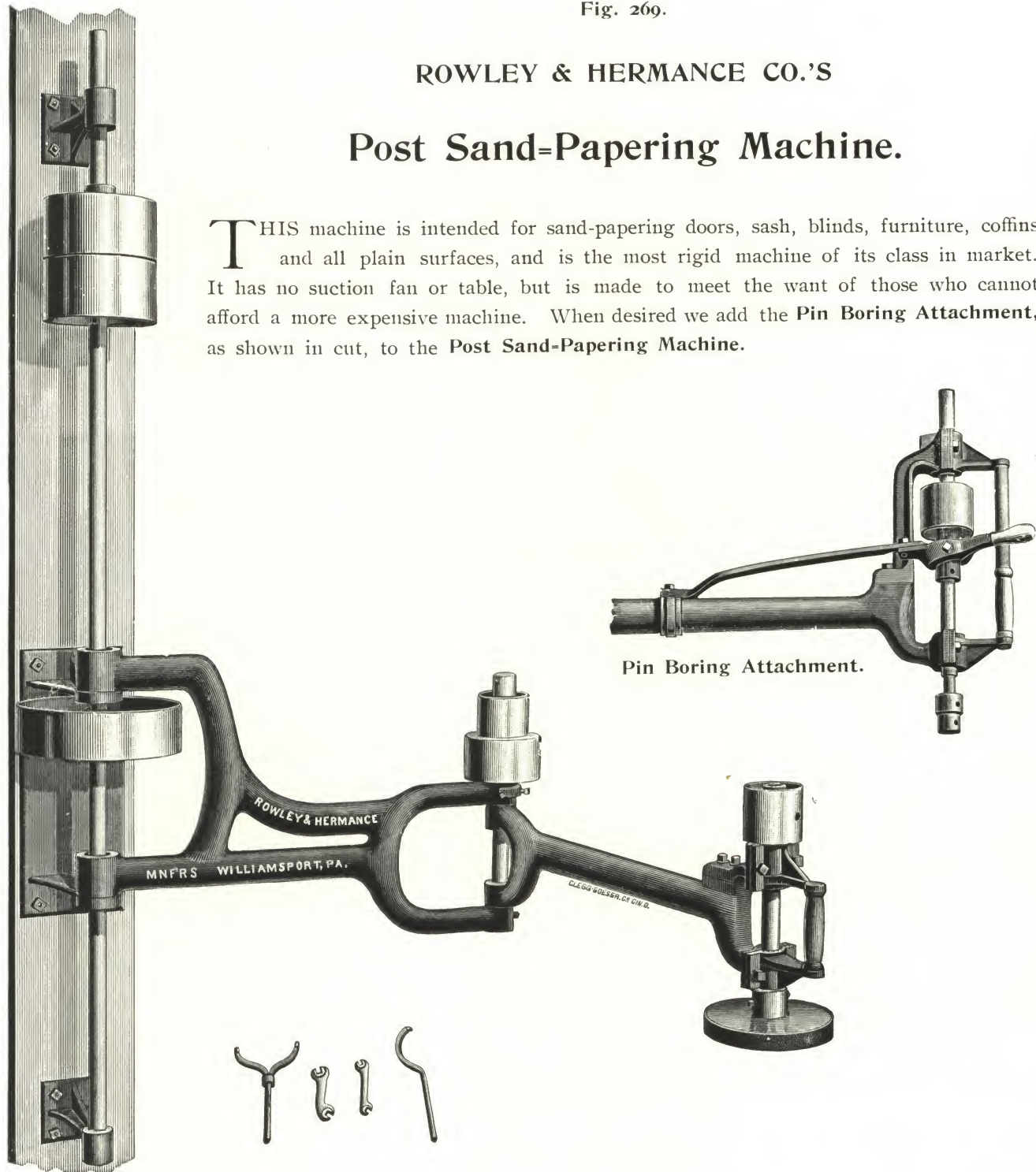
STYLE.	T. and L. Pulleys.	Revs. per Minute.	H. P. Required.	Weight.	Code Word.
Fig. 267 —Complete, on Iron Frame.....	10 x 4¼	1,000	2	650	Lappet.
Fig. 267 A—Complete, for one Belt only.....	10 x 4¼	1,000	2	650	Lapse.
Fig. 268 —Complete, with Wood Frame.....	10 x 4¼	1,000	2	500	Lapwing.

Fig. 269.

ROWLEY & HERMANCE CO.'S

Post Sand-Papering Machine.

THIS machine is intended for sand-papering doors, sash, blinds, furniture, coffins and all plain surfaces, and is the most rigid machine of its class in market. It has no suction fan or table, but is made to meet the want of those who cannot afford a more expensive machine. When desired we add the **Pin Boring Attachment**, as shown in cut, to the **Post Sand-Papering Machine**.



STYLE.	T. and L. Pulleys.	Revs. per Minute.	Cubic Measure.	H. P. Required.	Weight.	Code Word.
Fig. 269 —Complete, without Pin Boring Attachment	8 x 4	650	7	1	375	Larceny.
Fig. 269 A—Complete, with Pin Boring Attachment.....	8 x 4	650	7	1	400	Larder.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 270.

ROWLEY & HERMANCO CO.'S

Improved Hollow-Arm Post Sand-Papering Machine.

THIS machine is intended for sand-papering doors, sash, blinds, furniture, coffins and all plain surfaces. It is constructed on the principle of our **Nichols' Patent Sand-Papering Machine**, and arranged to be connected with a fan.

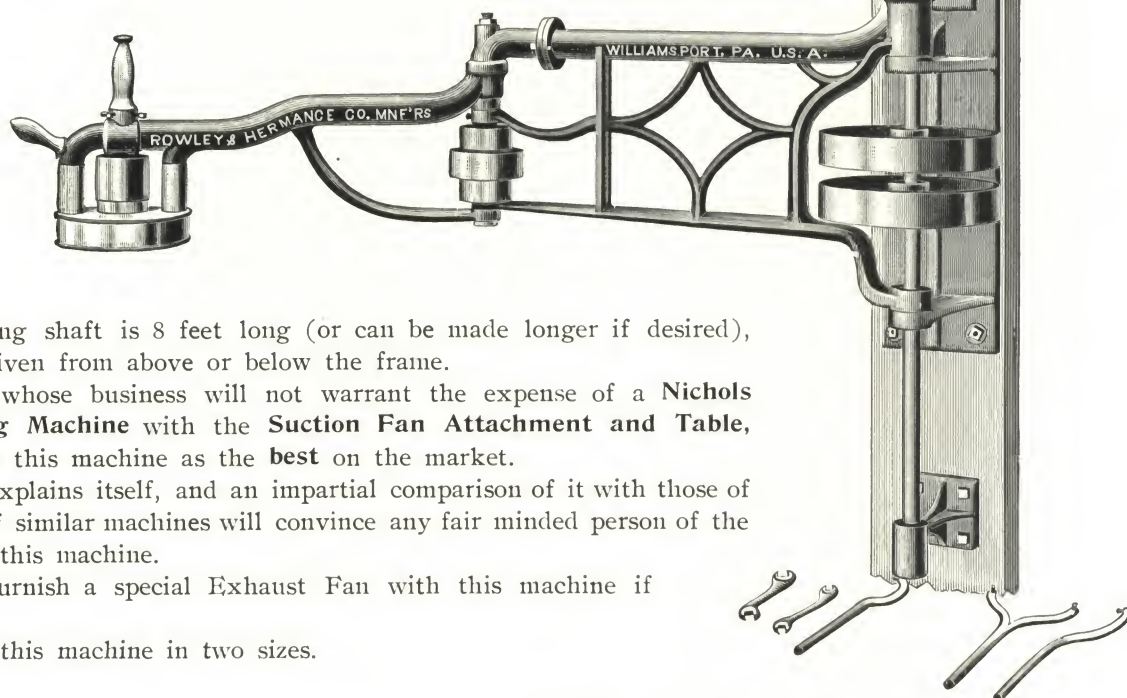
By attaching tin pipes with the exhaust fan and the hollow arms, which are cored throughout, the dust can be drawn through the arms from the disc and carried away from the building; keeping the surface of the work and the shop free from dust.

It is simple in construction, admits of any swinging or doubling necessary to accomplish its object, and is the most rigid machine of the class on the market.

We call special attention to the **Center Pulley** from which the disc is driven. An examination of this pulley will show that it is a **Double Pulley**, and driven by two belts from the counter-shaft, which give an equal strain on the pulley and much more power than if it were simply a single belted pulley like those of other makes.

Attention is also directed to the shape of the arms at the **disc, center joint, and where connected with the frame at hanger**. These arms are constructed to admit of the free passage of the dust from the disc to the fan or main exhaust pipes on a continuous upward curve. In other machines the arms have either square joints or downward curves, which quickly fill with dust and obstruct the passage, thus defeating the object for which they are constructed.

It carries its own counter-shaft.



The driving shaft is 8 feet long (or can be made longer if desired), and can be driven from above or below the frame.

To those whose business will not warrant the expense of a **Nichols Sand-Papering Machine** with the **Suction Fan Attachment and Table**, we recommend this machine as the **best** on the market.

The cut explains itself, and an impartial comparison of it with those of other makes of similar machines will convince any fair minded person of the superiority of this machine.

We can furnish a special Exhaust Fan with this machine if required.

We build this machine in two sizes.

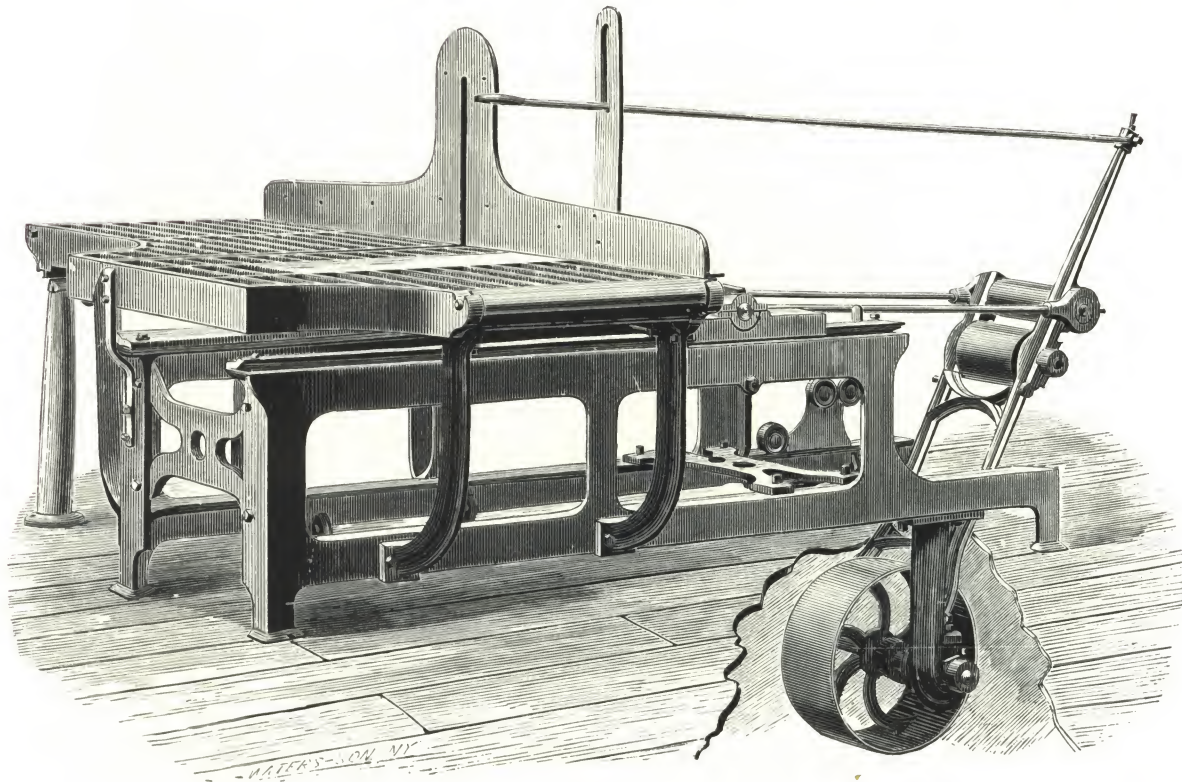
STYLE.	T. and L. Pulleys.	Revs. per Minute.	Cubic Measure.	Weight.	Code word.
Fig. 270 —Complete, No. 1, with Arms 4 feet 8 inches long.....	8 x 4	650	7	375	Larigot.
Fig. 270 A—Complete, No. 2, with Arms 7 feet 11 inches long.....	8 x 4	650	8	450	Larking.
Fig. 270 B—Special Exhaust Fan, for either machine, extra .....	.....	.....	.....	.....	Larmier.

AMERICAN WOOD-WORKING MACHINE CO.

Fig 271.

C. B. ROGERS CO.'S

No. 1, Large Railway Saw.



THIS machine is very heavy and durable, and adapted for use in car-shops for cutting up heavy lumber. It has a heavy iron frame, firmly braced. The arbor and boxes are confined to a sliding frame, which moves backward and forward on iron ways.

The arrangement for belting is such that the tension of the belt is always the same, and the saw driven by the tight part of the belt. A weight and pulleys are attached, to assist the operator in drawing the saw through the stuff.

The Arbor is very heavy cast steel, suited for a 24 to 36 inch saw, and can be used for cutting up hard wood plank 6 to 8 inches thick.

The Saw traverses and it will cut across 4 feet.

We have recently improved this machine by the addition of an Iron Table, adding to the value and cost of the machine.

The size of hole required for the saw is $1\frac{7}{8}$ inch. We do not send the saw unless specially ordered, in which case we furnish at manufacturers' prices.

Belting Required: $17\frac{1}{2}$ feet of 7 inch belt. Driving belt should be $5\frac{1}{2}$ inch.

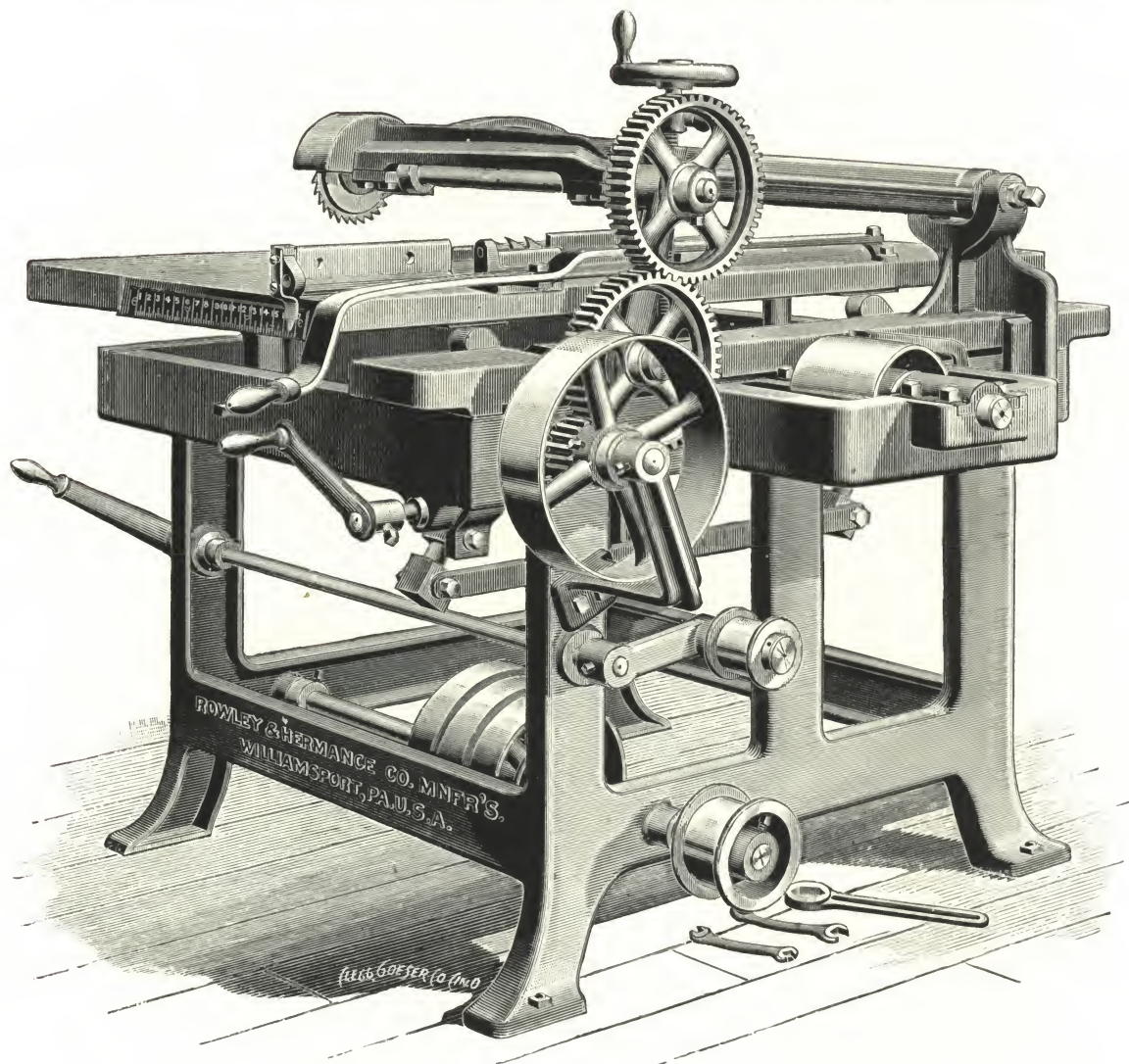
STYLE.	T. & L. Pulleys.	Rev. per Minute.	H. P. Required.	Weight.	Code Word.
Fig. 271—No. 1 Railway Saw, Iron Frame, with Table.....	12 x 6	400	6	1,850	Larynx.

Fig. 272.

ROWLEY & HERMANCE CO.'S

Improved No. 1, Lightning Self-Feeding Rip Saw Table.

With Iron Table, Outside Bearing and Improved Table Raising Attachment.



Patented July 18, 1893.

THIS Improved 'Self-Feeding' Rip Saw Table is intended to take the place of the ordinary hand-feed rip saw table, for ripping lumber into strips of any width up to 16 inches wide and 6 inches thick. It will pay any user of rip saws to replace their hand-feed rip saws with this machine, as it will double their capacity with less hard work, and *lessen the liability to accident.*

The Iron Frame is cast in one piece, very heavy and strong, with a substantial outside bearing for saw arbor.

The Table is iron, with an opening around the saw, into which an iron plate is accurately fitted, which is taken out when saws are to be changed; thus avoiding the lifting up of the table.

The Feed works are powerful and reliable, capable of doing rapid work, and are started and stopped by a tightener. The feed roll marks are taken out by the saw, leaving no mark on the lumber.

There are three rates of feed, slow, medium and fast, 45, 100 and 160 lineal feet per minute respectively.

The method of changing from self-feed to hand-feed is simple, rapid and easy.

The Patent Setting Device is entirely new and novel. The gauge can be set at any mark on the index plate, or at any fraction of an inch, and by a slight movement of the lever is locked rigidly in position.

The Iron Table is raised or lowered vertically by our improved patent table raising device, with a crank at the front end, as shown in the cut. The table is provided with two long idle rolls, which relieve it from friction and wear.

A Shield covers the saw when in operation, and the table is supplied with a spreader, making it absolutely impossible for a board or short pieces to be caught and thrown over the saw, thus avoiding accidents from that cause.

This machine is particularly adapted for ripping boards, moulding stock and general planing mill work.

We furnish one 14-inch saw, one feed saw, and necessary wrenches, with each machine. Two or more saws can be used at one time if so desired.

We build No. 1, with iron table hinged. No. 1, with iron table and patent table raising attachment.

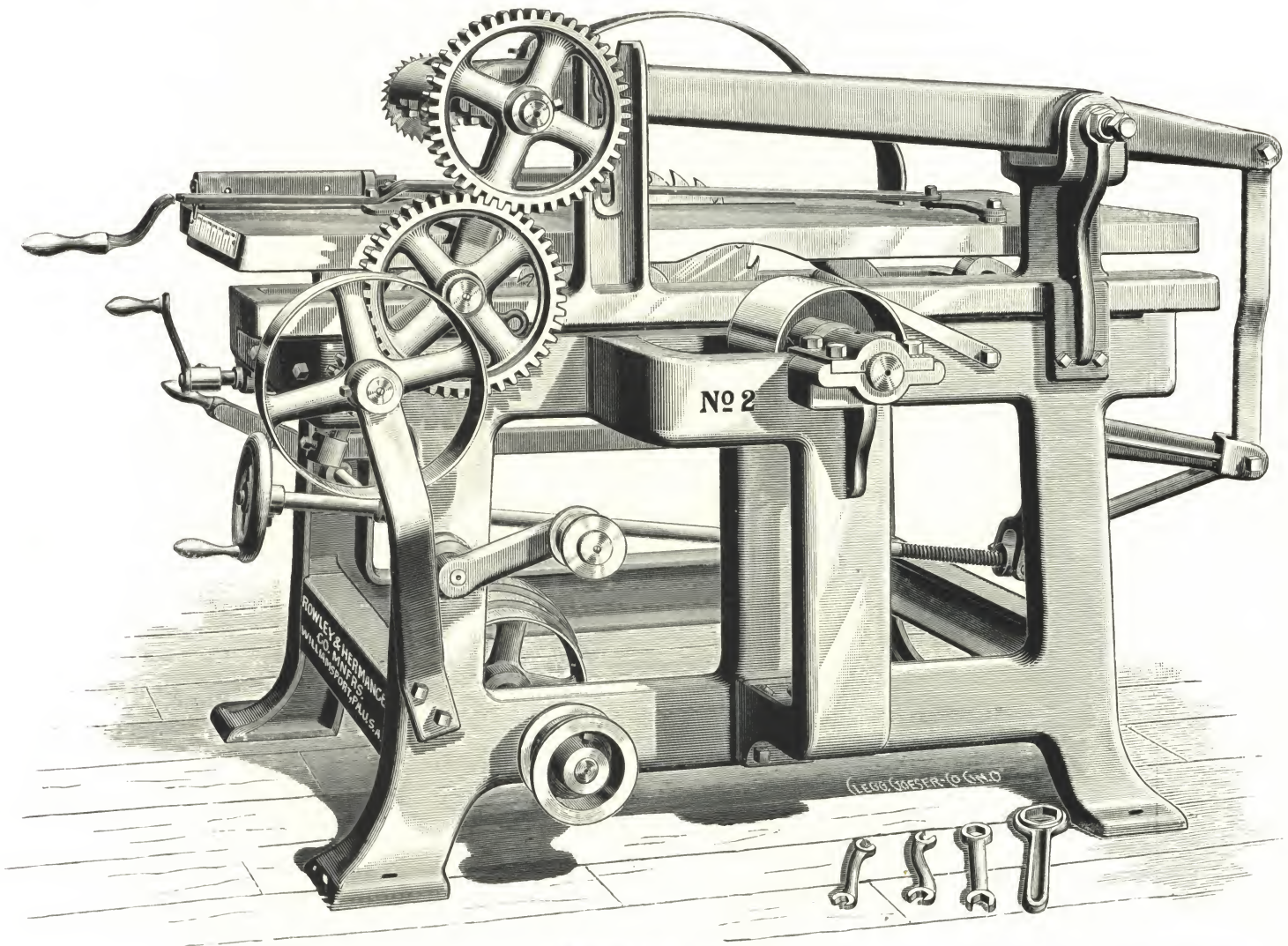
STYLE.	Pulley on Arbor.	Revs. per Minute.	Cubic Measurement.	Approximate Weight.	Average H. P. Required.	Code Word.
Fig. 272 —No. 1, Lightning Self-Feed Rip Saw	6 x 6	2,800 to 3,000	99	1,500	2 to 4	Lass.
Fig. 272 A—Counter-shaft furnished at extra cost when ordered, with Tight and Loose Pulleys	10 x 6	900	5	250	.....	Latchet.
Fig. 272 B—Bevel Siding Attachment, if wanted, extra .....	.....	.....	.....	.....	.....	Latency.

Fig. 273.

ROWLEY & HERMANCO CO.'S

No. 2, Lightning Self-Feeding Rip Saw Table.

With Iron Table, Outside Bearing and Improved Table Raising Device.



Patented July 18th, 1893.

THE accompanying engraving represents our **New Improved Heavy No. 2 Lightning Self-Feeding Rip Saw Table**, adapted to all kinds of ripping for which the **No. 1 Machine** is intended, besides being much heavier and suited to a greater variety of work.

The Iron Frame is cast in one piece, very heavy and strong, with a substantial outside bearing for the saw arbor, strongly braced to the side and the bottom of the frame.

The Table is iron, 3 feet 8 inches wide, by 5 feet 2 inches long, with an opening around the saw, into which an iron plate is accurately fitted, which is taken out when saws are to be changed, thus avoiding lifting up the table.

The Iron Table is raised or lowered vertically by our Improved Patent Table Raising Device, with a crank at the front end, as shown in the cut. The table is provided with two long idle rolls, which relieve it from friction and wear.

The Feed works are powerful and reliable, capable of doing rapid work, and are started and stopped by a tightener. The feed roll marks are taken out by the saw, leaving no mark on the lumber.

It is the strongest feeding machine on the market. There are three rates of feed—slow, medium and fast, 72, 132 and 190 lineal feet per minute respectively.

Our method of changing from self-feed to hand-feed by means of a hand wheel, shown at front of machine, is simple, rapid and easy; and the feed arm is self-adjusting for irregularities in thickness of lumber.

The Patent Setting Device for adjusting the gauge is entirely new and novel. The gauge can be set at any mark on the index plate, or at any fraction of an inch, and by a slight movement of the lever is locked rigidly in position.

A Shield covers the saw when in operation, and the table is supplied with a spreader, making it absolutely impossible for a board or short pieces to be caught and thrown over the saw, thus avoiding accidents from that cause.

This machine is particularly adapted for ripping boards, planks, moulding and general planing mill work. It will rip up to 18 inches wide and 8 inches thick. An attachment for sawing straight or bevel siding is furnished at extra cost if desired.

A 24-inch saw can be used, but one 18-inch saw only, with one feed saw and the necessary wrenches, are furnished with each machine regularly. Two or more saws can be used at one time, if so desired, by having extra collars for the saw arbor and feed arbor. This machine can be built as a right or left hand machine, but is always furnished as a right hand machine unless otherwise ordered.

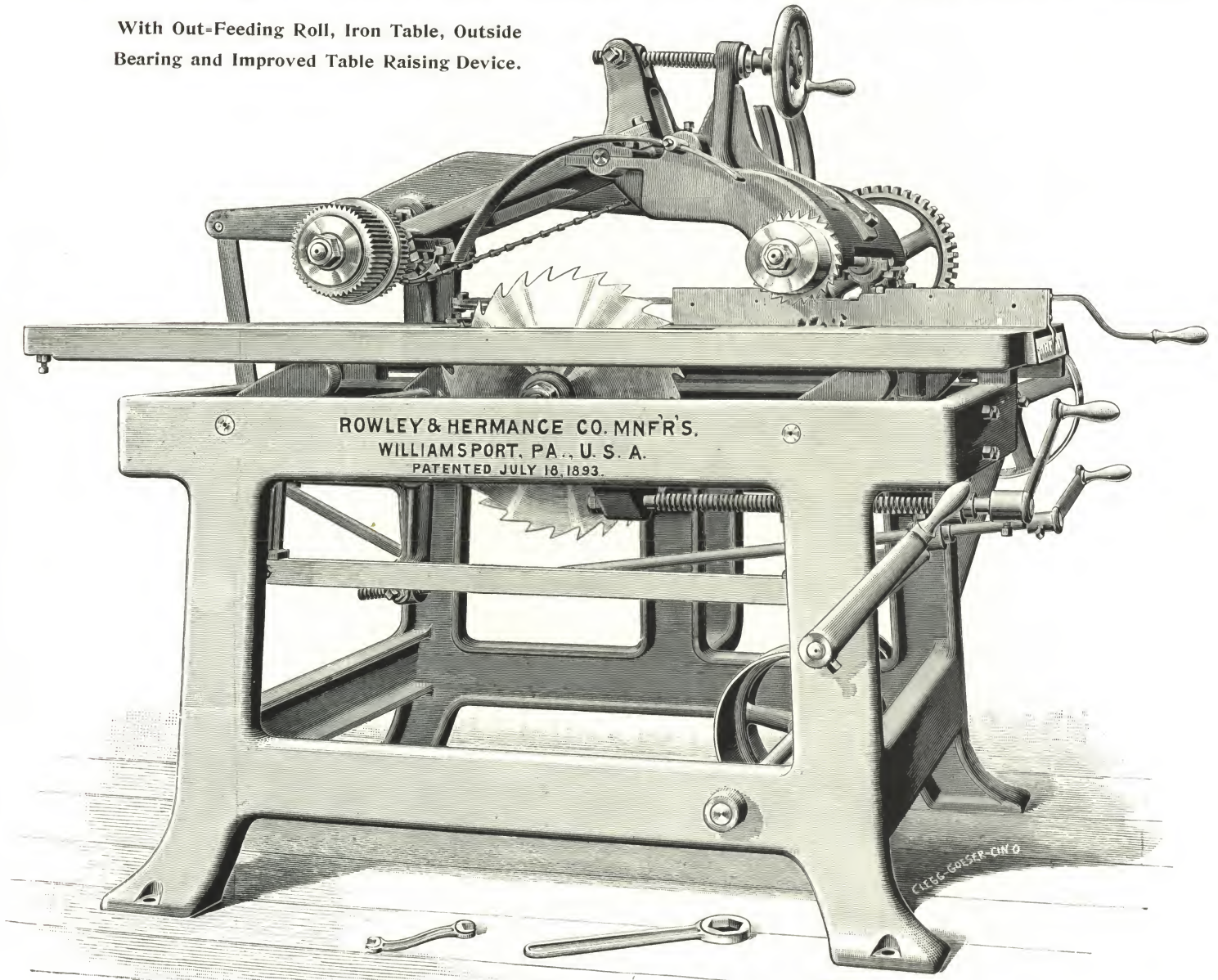
STYLE.	Pulley on Arbor.	Revs. per Minute.	Cubic Measurement.	H. P. Required.	Weight.	Code Word.
Fig. 273 —No. 2, Lightning Self-Feed Rip Saw.....	8 x 8	2,000	132	2 to 5	1,800	Lateness.
Fig. 273 A—Counter-shaft furnished at extra cost when ordered, with T. and L. Pulleys	12 x 8	700	6	.....	300	Laths.
Fig. 273 B—Bevel Siding Attachment, if wanted, extra, .....	.....	.....	.....	.....	.....	Lathing.

Fig. 274.

ROWLEY & HERMANCO CO.'S

No. 3, Heavy Pattern Lightning Self-Feeding Rip Saw Table.

With Out-Feeding Roll, Iron Table, Outside
Bearing and Improved Table Raising Device.



Patented July 18th, 1893.

THE above cut illustrates one of the latest improved, heaviest and most powerful **Self-Feed Saw Tables** now built, and is designed for all kinds of ripping of any width up to 18 inches wide and 8 inches thick. The iron frame is cast in one piece, very heavy and strong, with a substantial outside bearing for the saw arbor, strongly braced to the side and the bottom of the frame. **The Table** is iron 3 feet 8 inches wide by 5 ft. 2 inches long, with an opening around the saw, into which an iron plate is accurately fitted, which is taken out when saws are to be changed, thus avoiding lifting up the table. The iron table is raised or lowered vertically by our **Improved Patent Table Raising Device**, with a crank at the front end, as shown in the cut. **The Table** is provided with two long idle rolls, which relieve it from friction and wear. **The Feed** works are powerful and reliable, capable of doing rapid work, and are started and stopped by a tightener. **The Feed Roll** marks are taken out by the saw, leaving no mark on the lumber. **The Out-Feeding Roll** of the saw is an important feature to the power feed, as it carries all the stock out clear from the saw; also prevents the lumber from twisting and coming in contact with the back of the saw. It is the strongest feeding machine on the market, has three rates of feed—72, 132 and 190 lineal feet per minute. Our method of changing from self-feed to hand-feed by means of a hand wheel, shown at front of machine is simple, rapid and easy; and the feed arm is self-adjusting for irregularities in thickness of lumber. **The Patent Setting Device** for adjusting the gauge is entirely new and novel. **The Gauge** can be set at any mark on the index plate, or at any fraction of an inch, and by a slight movement of the lever is locked rigidly in position. We furnish with each machine one 18-inch saw (a 24-inch saw can be used). The in-feeding and out-feeding rolls are fitted with feed saw and spreader. Two or more saws can be used at one time if so desired, by having extra collars on the saw arbor and the feed rolls fitted accordingly. This machine can be built as a right or left hand machine, but is always furnished as a right hand machine unless otherwise ordered.

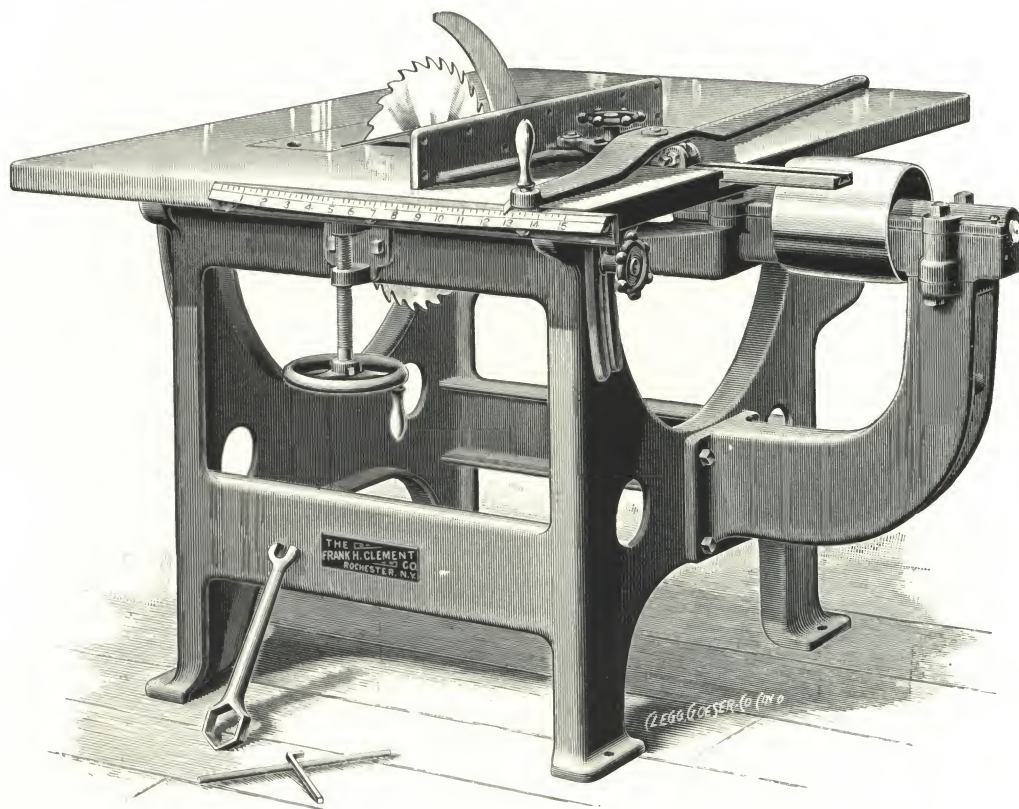
STYLE.	Pulley on Arbor.	Rev. per Minute.	Cubic Measurements.	Approximate Weight.	Average H. P. required.	Code Word.
Fig. 274 —No. 3 Lightning Self-Feed Rip Saw	8 x 8	2,000	132	2,000	2 to 5	Lattice.
Fig. 274A—Countershaft, if wanted, extra, with Tight and Loose Pulleys	12 x 8	700	6	300	.....	Lauder.
Fig. 274B—Bevel Siding Attach't, if wanted, extra, .....	.....	.....	.....	.....	.....	Laundry.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 275.

F. H. CLEMENT CO.'S

No. 2, Iron Frame Rip Saw Bench.



THIS is a heavy, well-proportioned machine, with large table, for ripping stuff up to 6 inches thick and 24 inches wide.

The Frame is cast in one piece and the arbor yoke is heavily ribbed and firmly bolted in, so as to avoid vibration of the saw.

The Arbor is of steel, $1\frac{5}{8}$ inch in diameter, and the arbor pulley is usually 7 inches by $7\frac{1}{4}$ inches, unless otherwise ordered; the three boxes are all self-oiling, with return drips, so that oil is used again and again, and does not drop on the floor.

The Table is usually of iron, 38 inches by 54 inches, and is hinged at the back of the frame, and adjustable at the front by a screw and held by clamping segments.

The Ripping Gauge adjusts in a T slot in the table and is usually made with solid face, as shown, but we can furnish it adjustable for bevel sawing when required. There is also provision for adjusting the gauge to the saw, either "open" or "closed" at the back.

The Shifting Lever and index is an attachment for matching up stock, and is provided with an instantaneous clamp on the quadrant (not shown in cut).

Saws may be used up to 21 inches in diameter, and a 16-inch saw with $1\frac{1}{4}$ -inch eye is sent with the machine. Saws 16 inches in diameter project 4 inches above the table.

Counter-Shaft is furnished on order.

Hardwood table can be supplied at a reduction from the regular price.

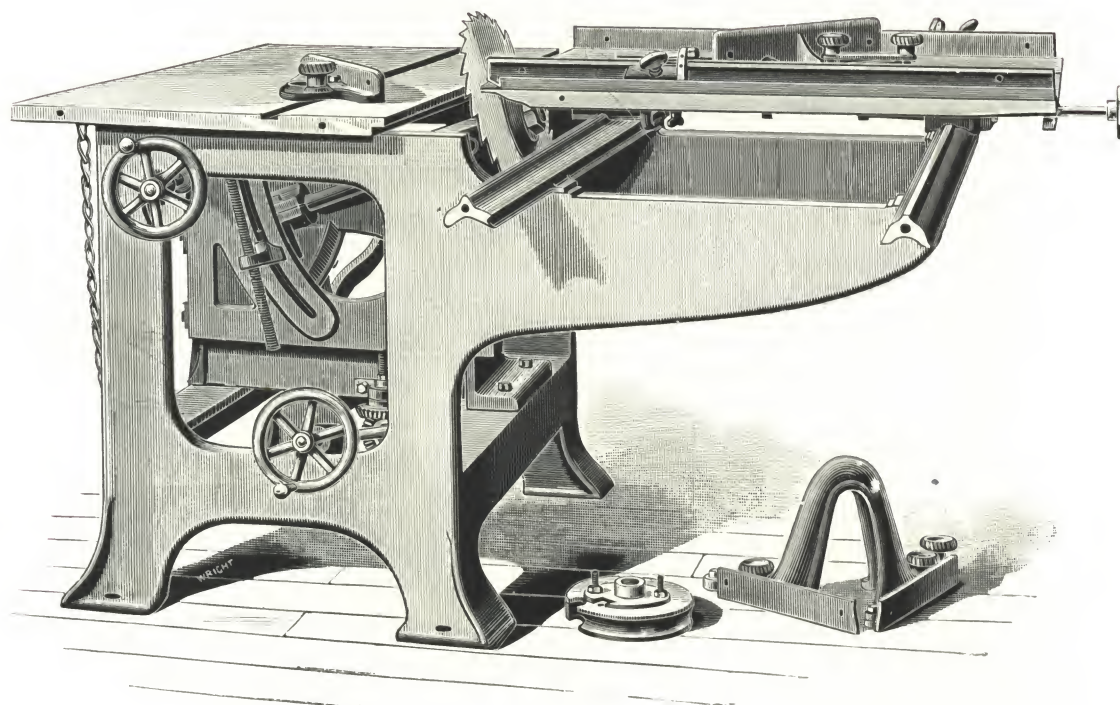
STYLE.	T. and L. Pulleys.	Pulley on Arbor.	Revs. per Minute.	H. P. Required.	Weight.	Code Word.
Fig. 275 —Iron Table, no Counter-Shaft.....	12 x $8\frac{1}{4}$	7 x $7\frac{1}{4}$	2,000 to 2,200	5	900	Laurel.
Fig. 257 A—Iron Table, with Counter-Shaft.....	12 x $8\frac{1}{4}$	7 x $7\frac{1}{4}$	2,000 to 2,200	5	1,100	Lavaret.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 276.

LEVI HOUSTON CO.'S

New Combination Saw Bench.



THE accompanying cut represents our **New Saw Bench**, which is especially designed for furniture and carriage factories, moulding and planing mills, for cutting miters and all kinds of bevels. It is so constructed that it does this class of work very accurately and quickly. The machine is as well adapted to ripping, cross-cutting and dadoing as for mitering. It will be seen from the cut that the saw can be raised and lowered and set to any angle up to forty-five degrees.

Both Tables have End Adjustments. The one used for cross-cutting runs on ways with roller bearings, which make it very easy to operate. The machine is provided with all necessary guides for ripping, cross-cutting and mitering.

A Compensatory Idler is attached to the frame to give the proper tension to the belt at any position of the mandrel.

The entire machine is made of iron and steel, the frame being cast in one solid piece, very heavily braced, and will be found a decided improvement over any machine for this purpose yet placed on the market.

Belt Required: One belt 8 feet 8 inches long, 4 inches wide.

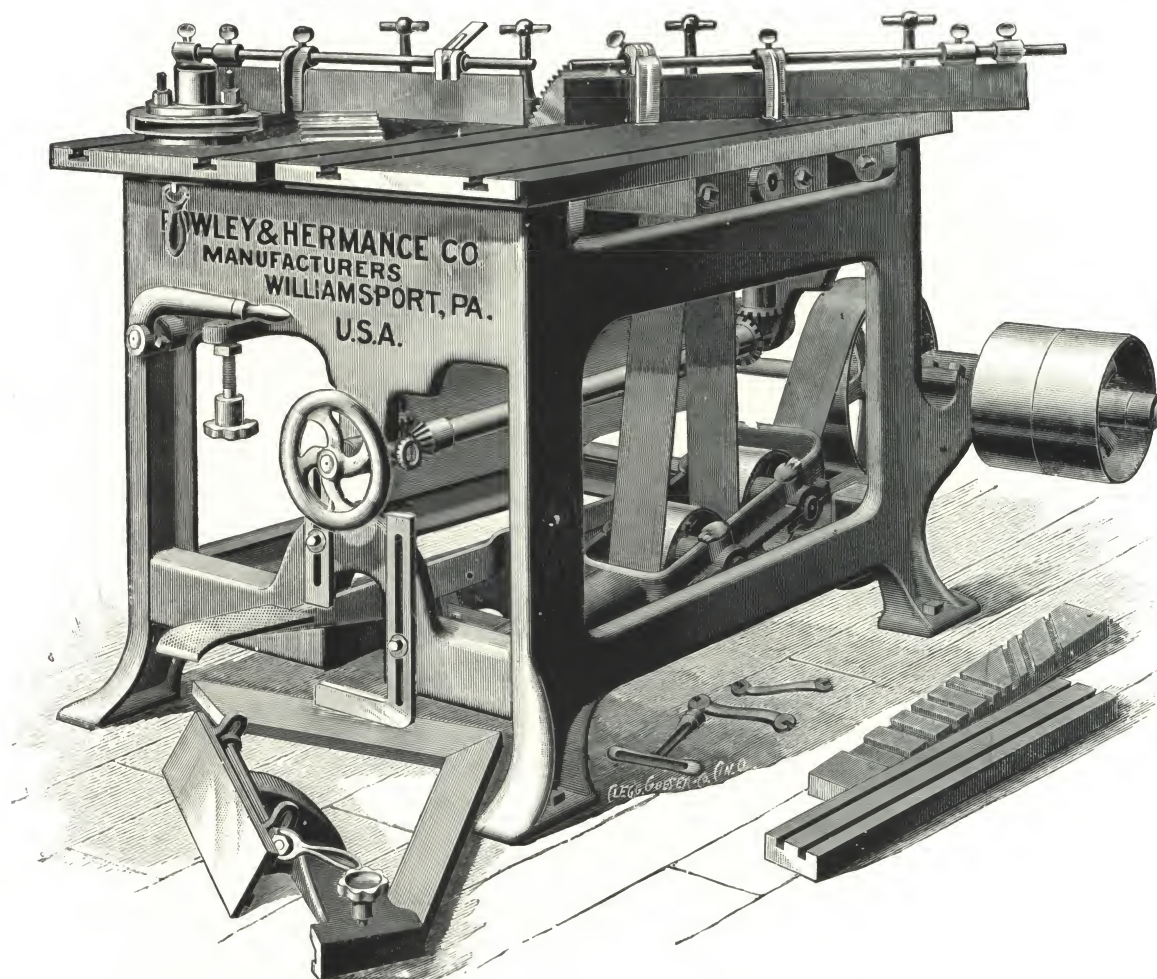
STYLE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 276 —With Dado Head	7 x 6	800	1,400	Lavendar.
Fig. 276 A—Without Dado Head	7 x 6	800	1,400	Lavish.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 277.

ROWLEY & HERMANCE CO.'S

No. 7, New Pattern Improved Combination Saw Bench.



THE Machine represented by the above cut is an entirely new design, and we believe the most complete, thoroughly constructed and easily managed **Combination Saw and Dado Machine** on the market for cutting-off, ripping, miter and bevel sawing, dadoing, etc. It does the work of several machines and occupies the space of but one.

The Counter-Shaft is placed in such a position that the machine may be belted from above. The travel of the saw produces only a very slight movement of the tightener frame. The belt is very wide and the tightener pulleys unusually large, thereby producing a powerful machine and reducing the stress on the belt.

The Saw may be brought forward a distance of 23 inches by means of a foot-treadle, which allows the operator the use of both hands to handle the board, by which arrangement he can accomplish more work than can be done on any other kind of saw table.

The Right Hand Table is pivoted to the frame and may be swung upward, thus exposing the carriage and all the surrounding parts, while the left hand table is arranged to slide outward by means of a handle, as shown in the cut, which is so constructed as to always keep the table parallel with the saw, and is also fitted with a screw which enables the operator not only to adjust the stop accurately, but to maintain the adjustment in case it is necessary to remove the saw or head during the execution of a certain job. The table may also be securely locked in any position.

The Machine is provided with a ripping gauge which may be set at any angle. The cross-cut gauges are instantly clamped to the table, and are so arranged that by loosening two nuts with the stationary wrenches they are at once changed from stationary to sliding gauges, and may be set at any angle not exceeding 45 degrees. The gauges can be reversed so that the saw will force the board against the face of the gauge if desired. A sliding stop is used to prevent the saw from going entirely back when it is desired to make short cuts.

The Machine will cut four inches thick, and will cut through a one-inch board twenty-one (21) inches wide.

We furnish with each machine one 14-inch saw, one belt and the necessary wrenches.

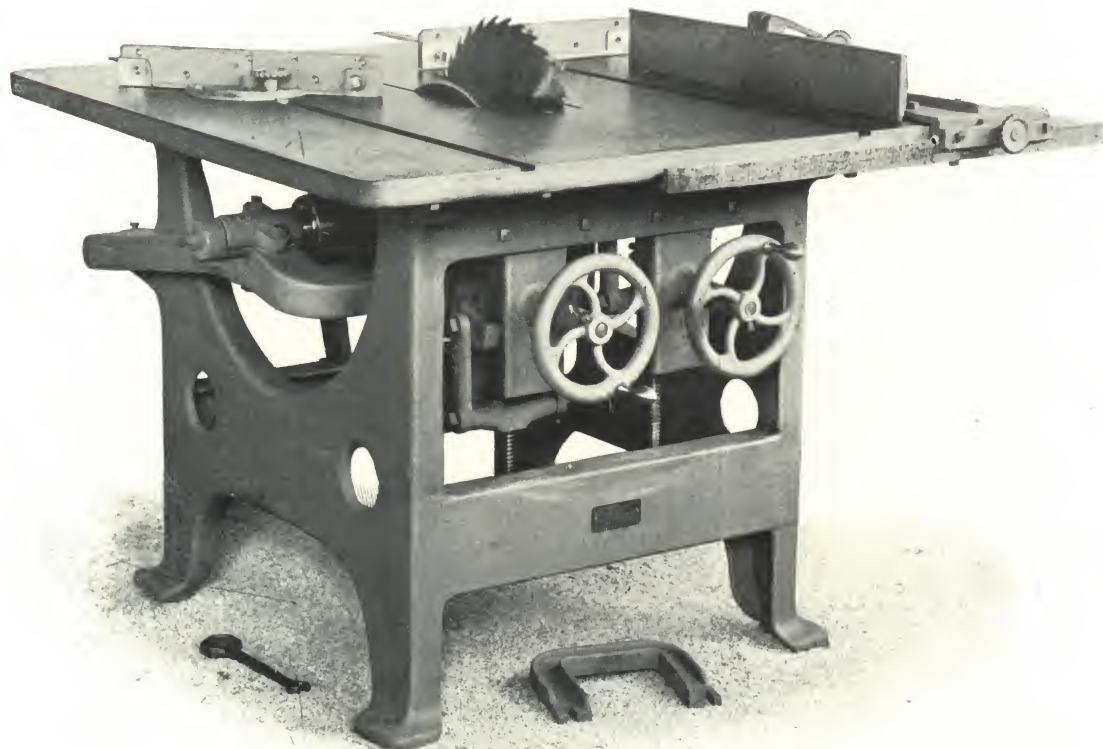
	STYLE.	Tight and Loose Pulleys.	Revs. per Minute.	Cubic Measurements.	Approximate Weight.	Average H. P. Required.	Code Word.
Fig. 277	No. 7, with Combined Rip and Bevel Gauge, one endless Belt, one 14-inch Saw, without Dado Head.....	10 x 5	850	68	1,260	1 to 3	Lawful.
Fig. 277 A	No. 7, the same Machine including Expanding Dado Head.....	10 x 5	850	68	1,260	1 to 3	Lawless.
Fig. 277 B	No. 7, as a cut off Saw only, with Plain Table, one 14-inch Saw, without Dado Head and Gauges.....	10 x 5	850	68	1,260	1 to 3	Laxation.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 278.

F. H. CLEMENT CO.'S

Improved Double Saw Bench.



THE engraving shows a new medium size saw bench arranged with two arbors for carrying a cut-off and a rip saw at the same time. It is all iron and steel, and the frame is cast in one piece, and is strong and massive.

The Arbors are $1\frac{1}{4}$ inches diameter; collars are 4 inches, and pulleys are 4 inches by 5 inches face. The arbor frames swing on a heavy steel trunnion shaft, and the end next the operator is guided in a vertical way, so that there can be no side motion to the saws at any part of their adjustment.

The Adjusting Screws are very convenient, and the shifting of both arbors occupies only a small fraction of a minute.

The Table is all iron, 44 x 48 inches surface, and has no crosswise slots, the splitting gauge being arranged on a way outside of the table. This gauge is adjustable to a miter and is accurately stopped at both miter and square, and can be set at any intermediate angle.

A Large Throat Plate admits both saws, and an iron plate fills the opening, and can be lifted out instantly to get access to the saws. One arbor extends beyond the nut to accommodate cutter heads of various kinds.

Cut-off Gauges are provided, one of which is adjustable to a miter, and they may be used on either side of the saw. Every part of the machine is conscientiously fitted, and table, gauges and arbors are carefully aligned and adjusted so as to do accurate work.

A Screw Adjustment for end play is provided on the arbors, and the journals are nicely fitted to scraped bearings so they will not heat with fair treatment.

Saws 16 inches diameter are used, and ordinarily the hole should be $1\frac{1}{8}$ inches, but this can be varied to order. A 10-inch saw projects 2 inches above the table.

The Counter-Shaft should be located on the floor, about $4\frac{1}{2}$ feet from the center of the arbors.

One each, cross-cut and rip saws are furnished, 16 inches diameter.

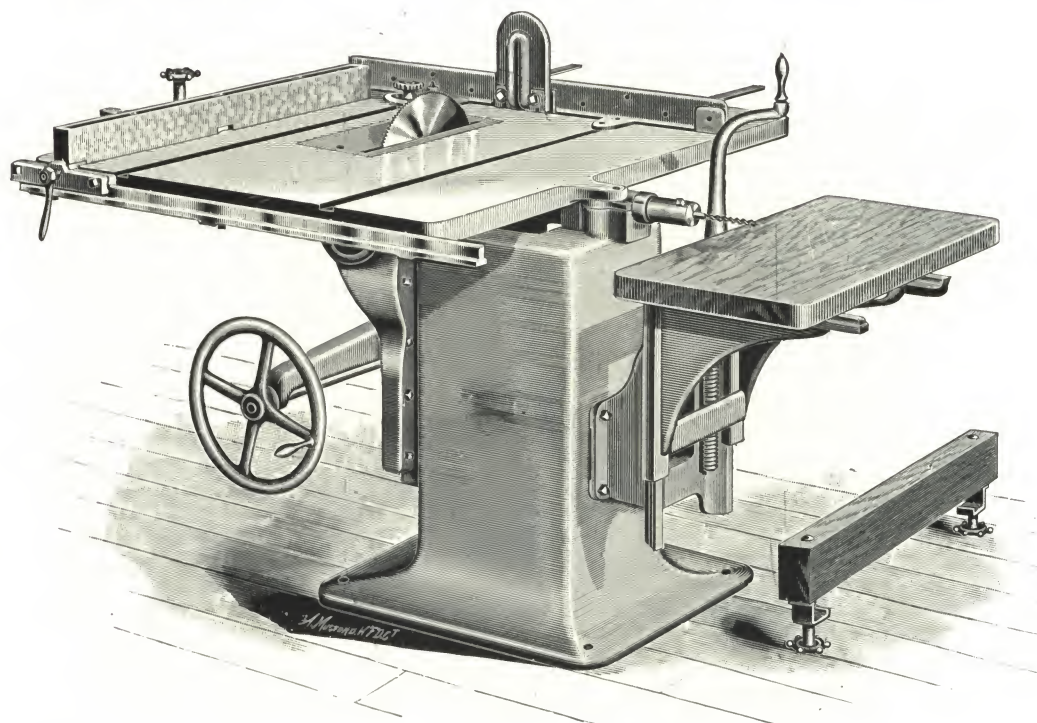
STYLE.	T. and L. Pulleys.	Revs per Minute.	H. P. Required.	Weight.	Code Word.
Fig. 278 —Double Saw Bench, with Counter-Shaft.....	10 x 6 $\frac{1}{4}$	600	2 to 3	1,250	Laxative.
Fig. 278 A—End Stop Cut-off Gauges, extra.....	.....	.....	.....	.....	Laxity.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 279.

F. H. CLEMENT CO.'S

No. 1, Variety Saw Bench, with Boring Attachment.



NO machine that we have ever brought out has given better satisfaction than our No. 1 Variety Saw Bench, and the demand for it has greatly exceeded our expectations, and often our facilities for manufacturing. Having many calls for a Boring Attachment for this machine, we herewith present an engraving of the complete machine.

The Frame is made in box form, cast in one piece, and is heavy and substantial, with a broad base flange and rigid slide ways for the table bracket or yoke.

The Table is of iron, and rises and falls 5 inches on gibbed ways by means of a screw and large hand wheel made convenient for the sawyer. It tilts upward from the right hand side to 45 degrees, and one of the cut-off gauges shown is also adjustable to a miter in either direction, and may be used on either side of the saw.

Special End Stop Gauges are furnished when ordered, in place of the ordinary cut-off gauges.

Jointing, Dadoing, Grooving and Rabbeting heads may be used by means of a large detachable throat plate surrounding the saw.

The Boring Attachment consists of heavy slide ways rigidly secured to the frame, upon which a strongly braced table bracket is gibbed. The table slide is gibbed in turn to ways on top of the bracket, and provision is made on both sides for taking up wear. Usually a wood table and bar, as shown in the cut, is furnished, but an iron table will be substituted at a slight extra charge.

All the Fitting is first-class and the parts are adjusted very exact, so that fine jointing may be done on the saw and accurate boring with the bits. The saw arbor has self-oiling boxes and there is provision for taking up the end motion.

A Special Jointing Table and gauge is furnished, when ordered, at an extra price. This is detachable from the saw-table, and one half of it may be adjusted to the cut, like a buzz planer table.

A Plain Bit Socket is sent with the machine, with $\frac{1}{2}$ inch hole or a Morse taper hole, as desired, but if preferred, Little Giant self-centering chuck can be supplied at the cost of the chuck extra.

The Counter-Shaft is usually attached to the floor, four to five feet from the machine, but it may be located below the floor. Either of these positions is far more satisfactory than attaching it to the frame of the machine.

The table surface is 36 x 44 inches, and stuff 20 inches wide may be slit. An 8-inch saw projects $1\frac{1}{2}$ inches above the table, and 15-inch saws may be used.

This Machine is particularly recommended for jobbing in connection with the jointing attachment and special cutter heads. A great variety of work may be done on it in the very best manner.

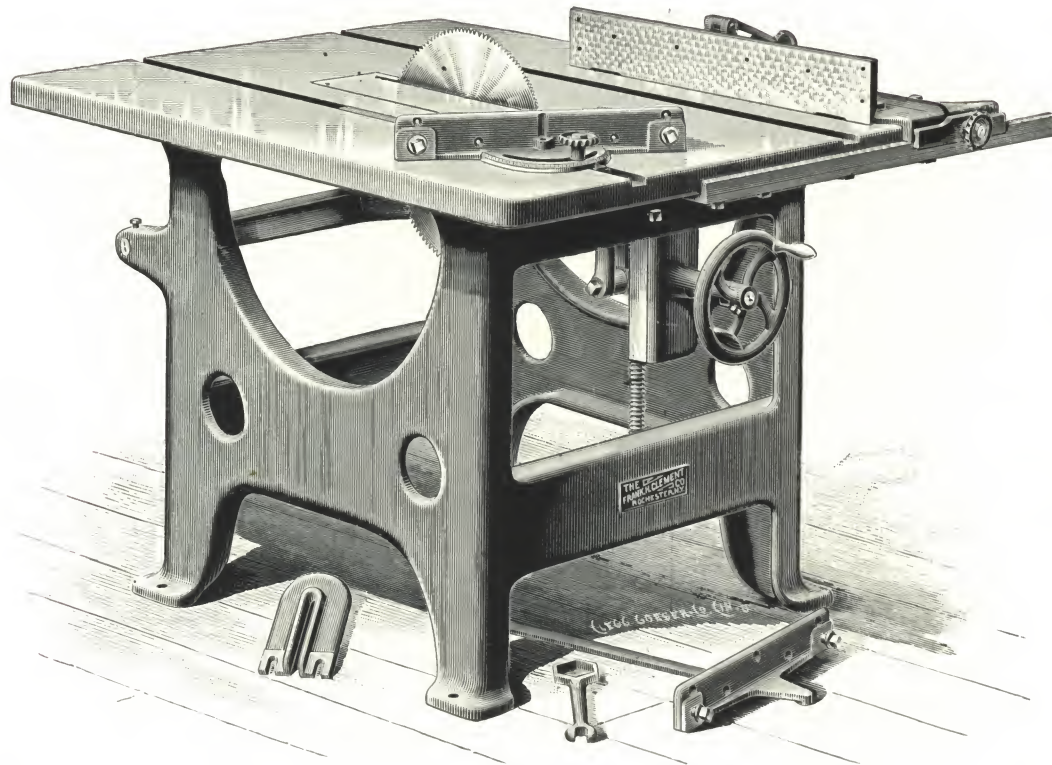
	STYLE.	T. and L. Pulleys.	Revs. per Minute.	H. P. Required.	Weight.	Code Word.
Fig. 279	—No. 1, Variety Saw Bench, with Boring Attachment.....	8 x 5 $\frac{1}{4}$	700 to 800	2	1,000	Laziness.
Fig. 279 A	—Self-centering Chuck, extra.....	.....	.....	.....	.....	Leader.
Fig. 279 B	—End Stop Cut-off Gauges, extra.....	.....	.....	.....	.....	Leafage.
Fig. 279 C	—Jointing Head, with Two Knives.....	.....	.....	.....	.....	Leafless.
Fig. 279 D	—Jointing Table, Gauge and Adjusting Screw.....	.....	.....	.....	.....	League.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 280.

F. H. CLEMENT CO.'S

No. 2, Combination Saw Bench.



THIS is a practical all around tool, embodying all the conveniences and attachments required for general work, either light or heavy. **The Frame** is cast in one piece, and is strong and massive. It stands 30 x 36 inches on the floor, and 33 inches high to top of table.

The Table is all iron and is 38 x 50 inches, with suitable longitudinal grooves for the gauges. It is firmly bolted to the frame and has a central throat 6 x 20 inches filled with a separate iron plate slotted for the saw. By this means saws can be changed easily, and dado heads or other cutters attached to the saw arbor. A finger hole in the plate makes it easy to remove, and wooden throat plates can be fitted in at any time for special jobs.

The Arbor is of hard steel $1\frac{3}{8}$ inches in diameter, and is ordinarily fitted to receive saws with $1\frac{1}{4}$ -inch hole, but this may be varied to order. The pulley is $4\frac{1}{2}$ x 6 inches and the bearings are long, nicely ground and fitted, and the boxes are self-oiling. The arbor frame swings on trunions at the rear, and is raised and lowered by the screw and hand wheel shown, which are attached to a stiff vertical way or guide for the arbor frame; this latter is thus held very rigidly and will not spring or vibrate.

Three Gauges are provided; one slitting gauge arranged to tilt to 45 degrees or less for bevel sawing; one adjustable and one stationary cut-off gauge, which may be connected by means of an iron yoke for cutting long stuff and fine jointing. The slitting gauge is carried on an adjustable track attached to the edge of the table, thus avoiding all cross slots in the surface of the table. The cut-off gauges are graduated to degrees and the slitting gauge to inches, and quarters.

A Boring Attachment is furnished at an extra charge, consisting of a bit socket on the outer end of the arbor, a sliding table having a vertical adjustment by a screw and crank, and suitable stops and gauges. Both sets of V slides have adjustable gibs to take up wear.

A Counter-Shaft is provided unless otherwise stipulated, and it should be located on the floor about 5 feet from the center of the arbor. The table throat will receive a 20-inch saw or cutter heads 5 inches wide, and a 10-inch saw will project $1\frac{1}{2}$ inches through the table.

One 16-inch saw is furnished with the machine.

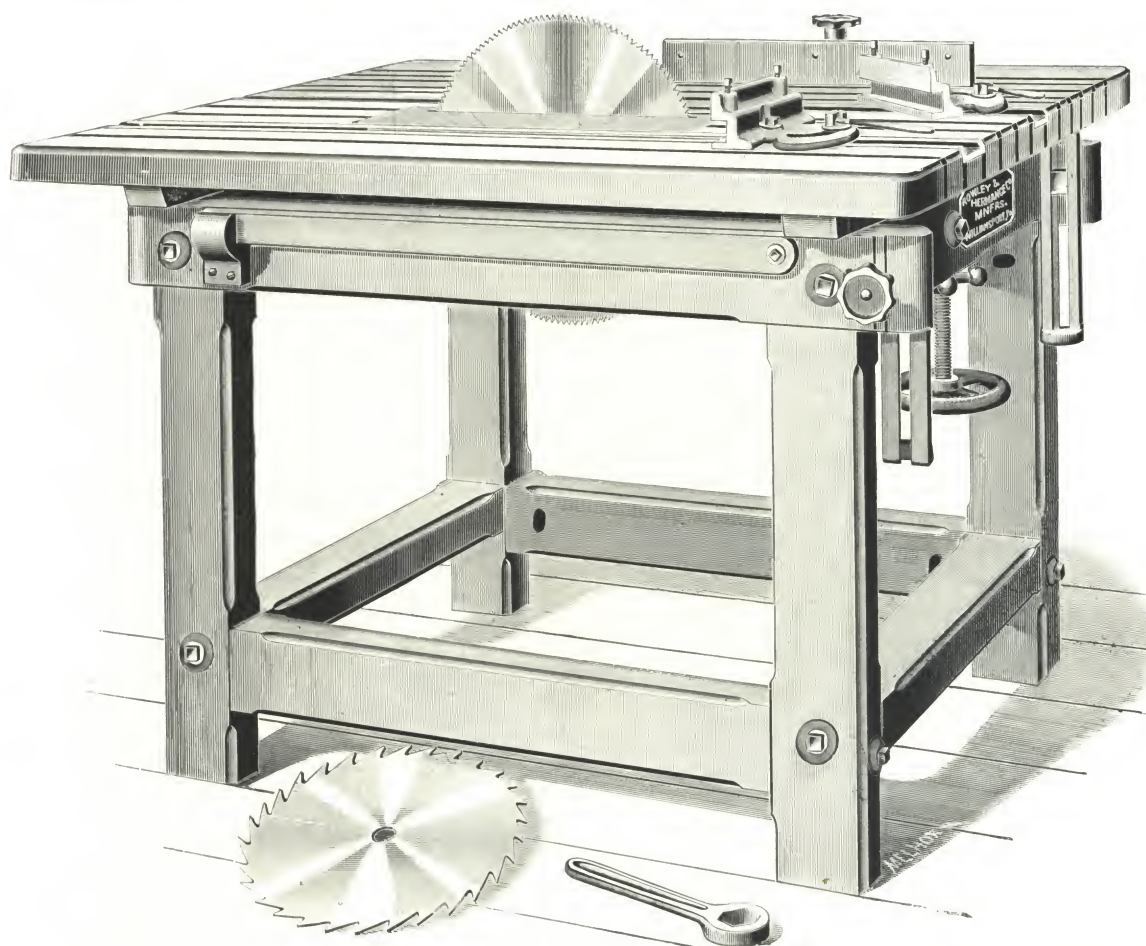
	STYLE.	T. and L. Pulleys.	Revs. per Minute.	H. P. Required.	Weight.	Code Word.
Fig. 280	—No. 2, Combination Saw Bench, with Counter-shaft	12 x $6\frac{1}{4}$	600	2 to 3	900	Leapfrog.
Fig. 280 A	—Boring Attachment, extra	.....	.....	.....	.....	Learned.
Fig. 280 B	—End Stop Cut-off Gauge, extra	.....	.....	.....	.....	Lease.
Fig. 280 C	—Self-Centering Chuck, extra	.....	.....	.....	.....	Leathery.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 281.

ROWLEY & HERMAN CO.'S

No. 9, Wood Frame Combination Saw Table.



THIS Machine has been designed to meet the demands for a low price Combination Saw, and will be found a most excellent machine for cutting-off, ripping, mitering and bevel sawing, dadoing, etc.

The Frame is made of seasoned hard wood, mortised together and securely held by joint bolts.

The Table is made of hard wood strips, glued up and bolted together, hinged at back end, and has a raising screw in front, on which there is a hand nut that holds the table securely when set at any required height.

The Arbor is of the best steel, the boxes are firmly fitted to the frame, allowing perfect work to be done in mitering and dadoing.

The Machine is provided with adjustable cut-off and rip-saw gauges, which are nicely fitted to dovetailed iron guide plates. The cut-off or miter gauges can be adjusted to 45° in either direction, and can be used on either or both sides of the saw. They are slotted so as to receive wooden gauges of any length.

The Iron Throat Plate in the center of the table can be quickly removed to facilitate changing the head or saw. Wooden throat plate can be used if desired.

All parts are accurately fitted and adjustments true and square, so that a fine joint can be made without subsequent hand fitting.

We furnish with each machine two adjustable cut-off gauges, one rip gauge, one 14-inch rip saw, one 14-inch cross-cut saw and necessary wrenches.

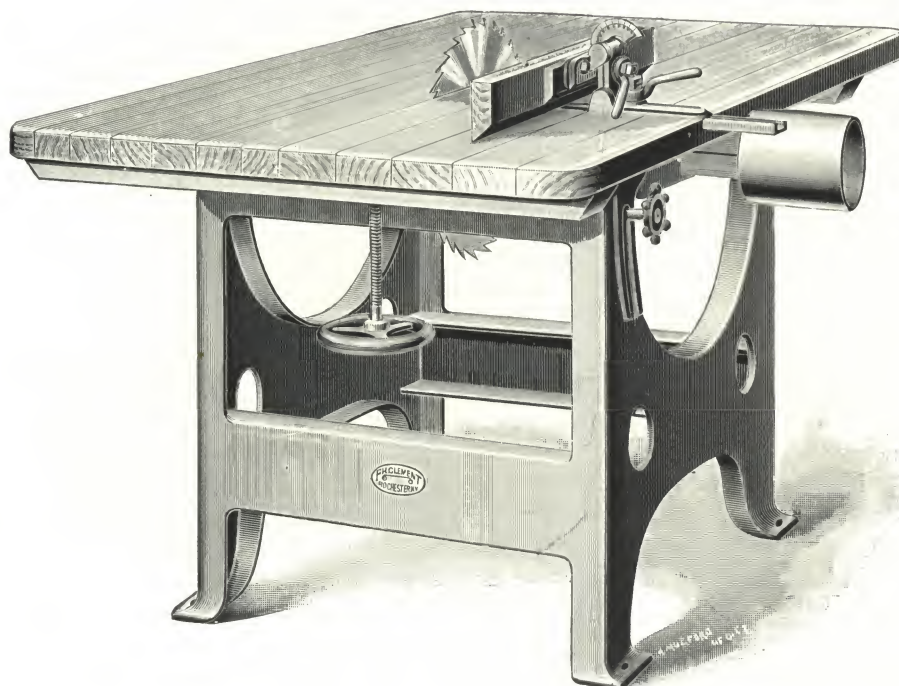
A Combination Rip and Bevel Gauge, for straight or bevel sawing, if desired, can be furnished at additional cost. The table is 4 feet wide by 4 feet long.

	STYLE.	Pulley on Arbor.	Revs. per Minute.	Cubic Measurements.	Approximate Weight.	Average H. P. Required.	Code Word.
Fig. 281	—No. 9, with two Adjustable Cut-Off Gauges, One Rip Gauge, one 14-inch Rip Saw, one 14-inch Cross-Cut Saw, without Dado Head	5 x 6	2,800	85	500	1 to 3	Leaven.
Fig. 281 A	—No. 9, with Dado Head and five Sets of Cutters	5 x 6	2,800	85	500	1 to 3	Lecturer.
Fig. 281 B	—Counter-shaft, if wanted, extra, with Tight and Loose Pulleys	10 x 6	700	5	250	.....	Ledger.

Fig. 282.

F. H. CLEMENT CO.'S

No. 1, Iron Frame Slitting Saw Bench.



THIS is a heavy, well proportioned machine, with large arbor and drive pulley, and is intended for splitting rough lumber up to 4 inches thick, in all kinds of wood working shops.

The Frame is cast in one piece, planed level on top, and the arbor yoke is heavily ribbed and bolted in so as to avoid vibration of the saw.

The Arbor is steel, $1\frac{3}{8}$ inches diameter, and the driving pulley is usually 6 x 6 inches, unless otherwise ordered; the boxes are extra long and nicely scraped to the journals, and they are self-oiling with return channels.

The Table is of kiln-dried cherry, glued up in strips 40 x 54 inches surface, and is hinged at the back of frame, and is adjustable by a raising screw and held by clamping segments at both sides, which are tightened by one wheel.

The Ripping Gauge adjusts in an iron dovetailed way let into the table, and is also adjustable to slit at any angle from square to miter. The improved gauge is all iron.

Saws may be used 20 inches diameter if necessary, and a 16-inch saw is usually sent with machine.

Counter-Shaft to order.

By the addition of a cut-off gauge and iron way let into the table, this makes a good general saw bench for any kind of work. Saws 12 inches diameter project $2\frac{1}{2}$ inches above the table.

Speed of arbor for 16-inch saw, about 2,500.

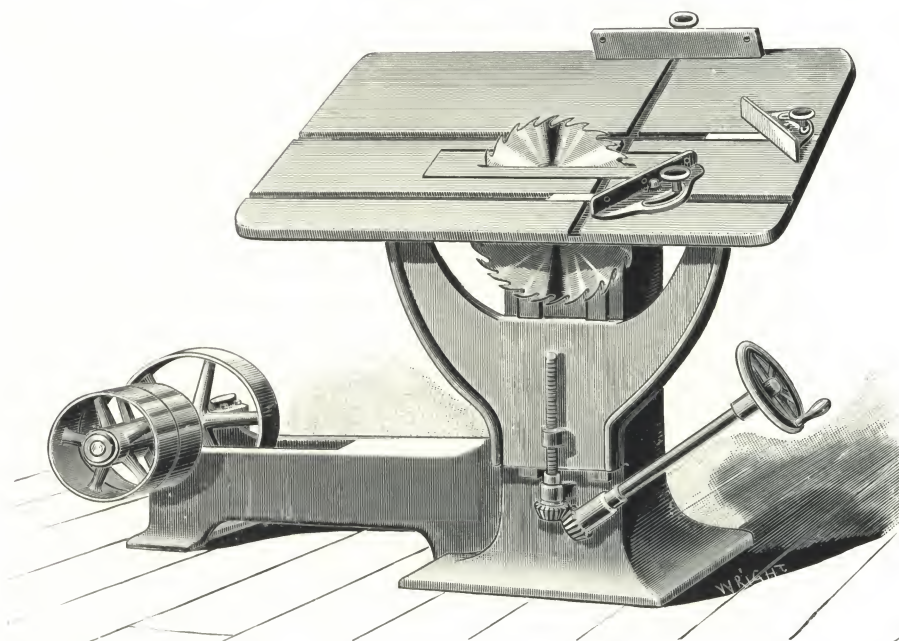
STYLE.	T. and L. Pulleys.	Revs. per Minute.	H. P. Required.	Weight.	Code Word.
Fig. 282 —Wood Table, no Counter-Shaft.....	.....	600	3 to 4	500	Leech.
Fig. 282 A—Wood Table, with Counter-Shaft.....	12 x 6 $\frac{1}{4}$	600	3 to 4	700	Leering.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 283.

LEVI HOUSTON CO.'S

No. 1, Improved Variety Saw.



THE above Machine being all iron and steel, the great variety of work it can be adapted to, and the precision and accuracy with which it can be handled, the convenience of adjustment, and the strength and durability of all parts, stamp it as a standard machine for ripping, cross-cutting, beveling, cropping, grooving, mitering, etc.

The machine is self-contained, the frame being a cored pedestal supporting the table and carrying the counter-shaft.

The Table is of cast iron, well ribbed and braced, and can be set plumb, or at right angles with the saw, or adjusted to any bevel up to 45 degrees. The table is raised and lowered in planed, gibbed ways, with adjustment for wear.

The Mandrel is of best cast steel.

The Fences can be used on either side of the saw, giving the operator every advantage and convenience, especially when using the table on a bevel. This point will be appreciated by a practical sawyer.

One 14-inch saw is generally furnished with the machine, and should run 3,000 revolutions per minute.

Furniture, chair and bracket factories, planing mills, carpenters, pattern and wood shops of all kinds will find this machine one that can be quickly adjusted for almost any kind of sawing.

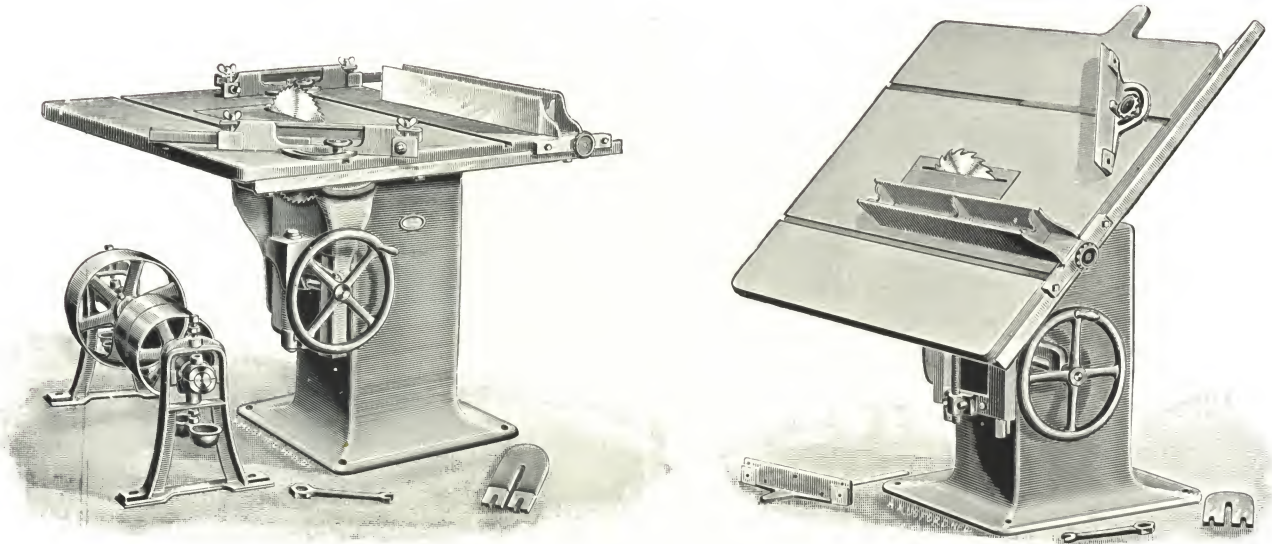
STYLE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 283—No. 1, Variety Saw.....	10 x 4½	750	1,000	Legalist.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 284.

F. H. CLEMENT CO.'S

No. 1, Variety Saw Bench.



THIS is a new and fine design for a general cutting off and splitting saw bench and combination machine for pattern, carpenter, chair, furniture, car, wagon and job shops, for light and accurate work.

The Frame is cored out in box form and cast in one piece, and is rigid and heavy.

The Table is all iron, and rises and falls five inches in a direct line on gibbed slides, by a large hand wheel and screw, and it also tilts upward from the right hand side to 45 degrees. Iron cut-off and splitting gauges are provided, the former of which can be adjusted to 45 degrees in either direction, and may be used on either or both sides of the saw.

The Adjustable End-Stop Gauges, shown in left hand cut, are furnished only when ordered, at an extra price; but one plain swivel, one square cut-off gauge and one splitting gauge are included in the price of the machine.

Jointing, Dadoing, Grooving, Rabbeting and moulding heads may be used, and the large iron throat plate in the center of the table can be removed instantly to facilitate changing heads or saws. Wood throat plates may be used, as desired.

A Boring Attachment is added when ordered, with sliding and vertically adjustable table, having all necessary stops and gibs, and a fence for holding work.

All Parts are nicely fitted, and adjusted true and square, so that fine jointing can be done without subsequent hand fitting. The arbor has self-oiling boxes, carefully scraped to the journal, and there is provision for taking up end motion.

The Counter-Shaft is usually attached to the floor, four to five feet from the machine, but it may be located below the floor. Either of these positions is more satisfactory than attaching it to the frame of the machine.

The table surface is 36 x 44 inches, and stuff 20 inches wide may be slit. An 8-inch saw projects 1½ inches above the table, and 15-inch saws may be used.

This Tool is particularly recommended as a jobbing machine in a small shop, and when boring attachment, jointing and rabbeting head are ordered with it, a great variety of work can be done on it in the best manner.

A Special Jointing Table, made detachable, is also furnished when required.

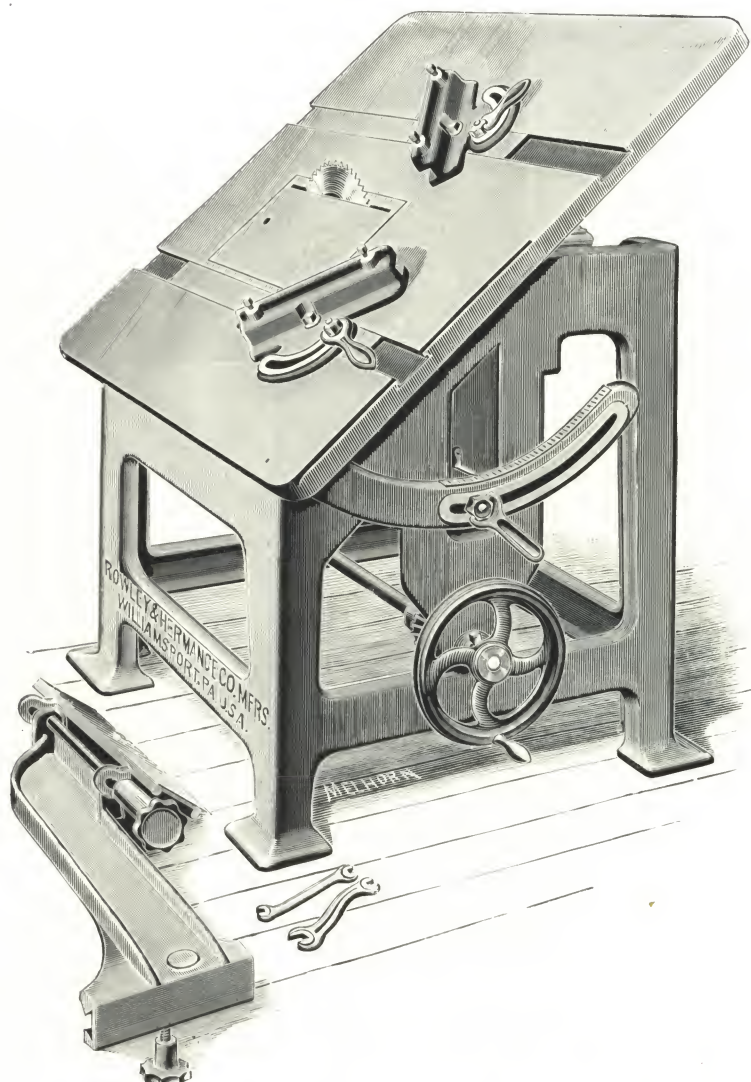
STYLE.	T. and L. Pulleys.	Revs. per Minute.	H. P. Required.	Weight.	Code Word.
Fig. 284 —No. 1, Saw Bench and Counter-Shaft.....	8 x 5¼	700 to 800	2 to 3	900	Legacy.
Fig. 284 A—End Stop Cut-off Gauges, extra .....	.....	.....	.....	.....	Legend.

(For machine with Boring Attachment see page 325.)

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 285.

ROWLEY & HERMANCE CO.'S No. 8, Adjustable Saw Table.



THIS machine has a heavy, substantial frame, cast in one piece, which makes it very rigid. It has an **Iron Table**, arranged to work straight or on a bevel, which raises and lowers in a direct line on gibbed slides by simply turning the large hand wheel shown on the front of the machine; and the slides have an adjustment for taking up any wear that may occur at this point. It tilts on large circles to 45 degrees, and is easily and quickly tilted by loosening one nut, and when it is set it is rigidly held in place.

The Arbor is placed in the frame and held by solid cap boxes, which hold it firmly in position; thus allowing perfect work to be done in mitering and dadoing. It is also provided with a **Degree Index Plate**, shown on the circle in front of the machine, for setting the table at any angle with the saw.

The machine is fitted with **Adjustable Cut-off and Combined Rip and Bevel Gauges**. **The Cut-off Gauges** can be adjusted to 45 degrees in either direction, and can be used on either or both sides of the saw. They are all slotted to receive wooden gauges of any length. The combined rip and bevel gauge is adjustable for straight or bevel sawing.

Dadoing, Grooving, Jointing, Moulding and Rabbeting Heads can be used on this machine if it is desired.

The large **Throat Plate** in the center of the table can be quickly removed to facilitate changing the head or saw. **Wooden Throat Plates** can be used if desired. All parts are accurately fitted, and adjustments true and square, so that a fine joint can be made without subsequent hand fitting.

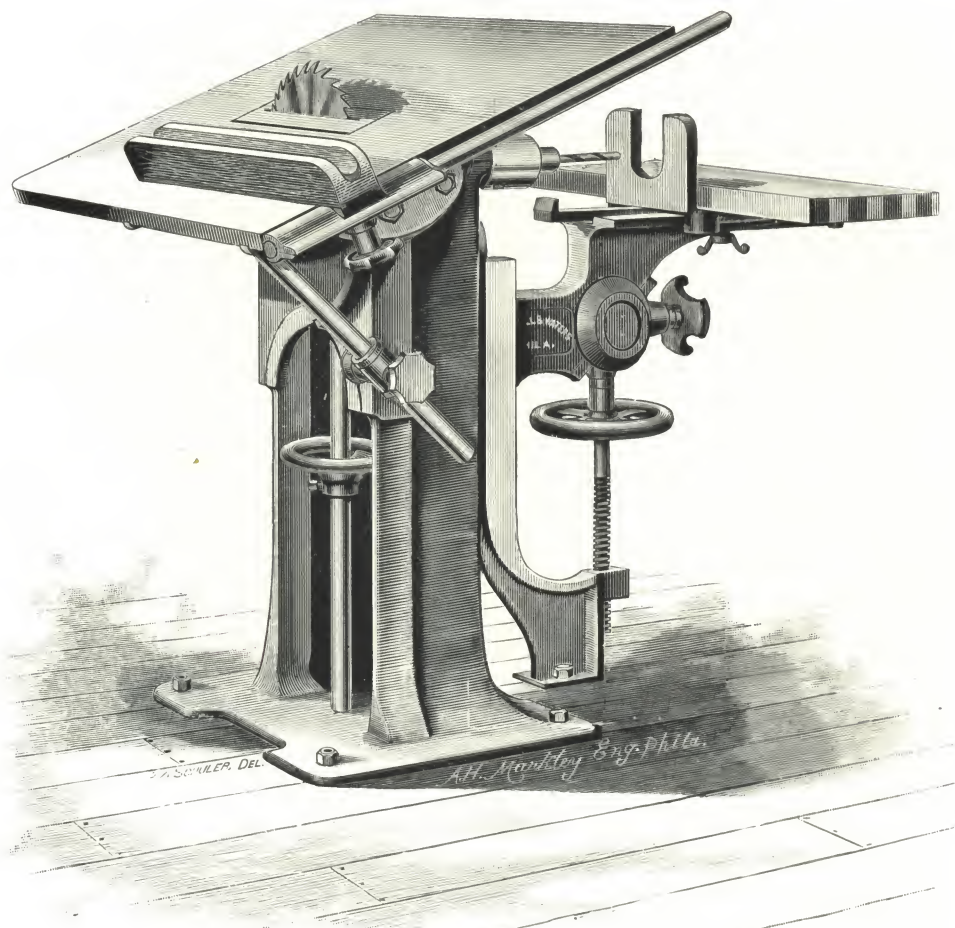
We furnish with each machine two adjustable cut-off gauges, one combined adjustable rip and bevel gauge, one 12-inch cross-cut saw, one 12-inch rip saw, two wrenches and a counter-shaft.

This table is 36 inches wide by 39 inches long. Pulley on arbor is 4 inches in diameter by 5 inches face, and should run 3,000 revolutions per minute.

STYLE.	T. and L. Pulleys.	Revs. per Minute.	Cubic Measurement.	Weight.	H. P. Required.	Code Word.
Fig. 285 —No. 8, with two adjustable cut-off gauges, one combined adjustable rip and bevel gauge, one 12-inch cross-cut saw, one 12-inch rip saw, two wrenches and counter-shaft (without dado head).....	10 x 5	700	42	850	1 to 3	Legerete.
Fig. 285 A—No. 8, with dado head and five sets of cutters....	10 x 5	700	....	850	1 to 3	Legerity.

Fig. 286.

GOODELL & WATERS' Small Adjustable Top Saw Table. WITH BORING ATTACHMENT.



THIS is the smallest of a series of sawing machines we are now producing, and merits particular attention because of the progress made in this class of wood-working machinery.

The Table is 34½ inches long and 28 inches wide, and can be tilted at any angle to 45 degrees. The positions for cutting angles are shown by a graduated scale at the fastening screw.

The Perpendicular Elevation of the table, and the tilting of the table are wholly independent of each other, so that either can be changed without effecting the other.

The Saw-Arbor is conveniently arranged for change of saws and the use of groover-heads.

The rear end of the arbor is fitted for boring implements and drills, and together with the bracket sliding-table, form an excellent boring and drilling machine with elevating adjustment and sliding carriage.

The edges of the table top are planed perfectly parallel with the saw, so that cut-off and miter gauges may easily be fitted if required, and still have the table top solid and clear from all obstructions, easily changed and instantly removed when required.

The Slitting Gauge will open 14 inches, and slides on a bar at the front of the table, and is easily moved to the right or left of the saw, making it both a right hand and left hand machine; and can be instantly removed when not wanted. Hole in saw, 1 inch.

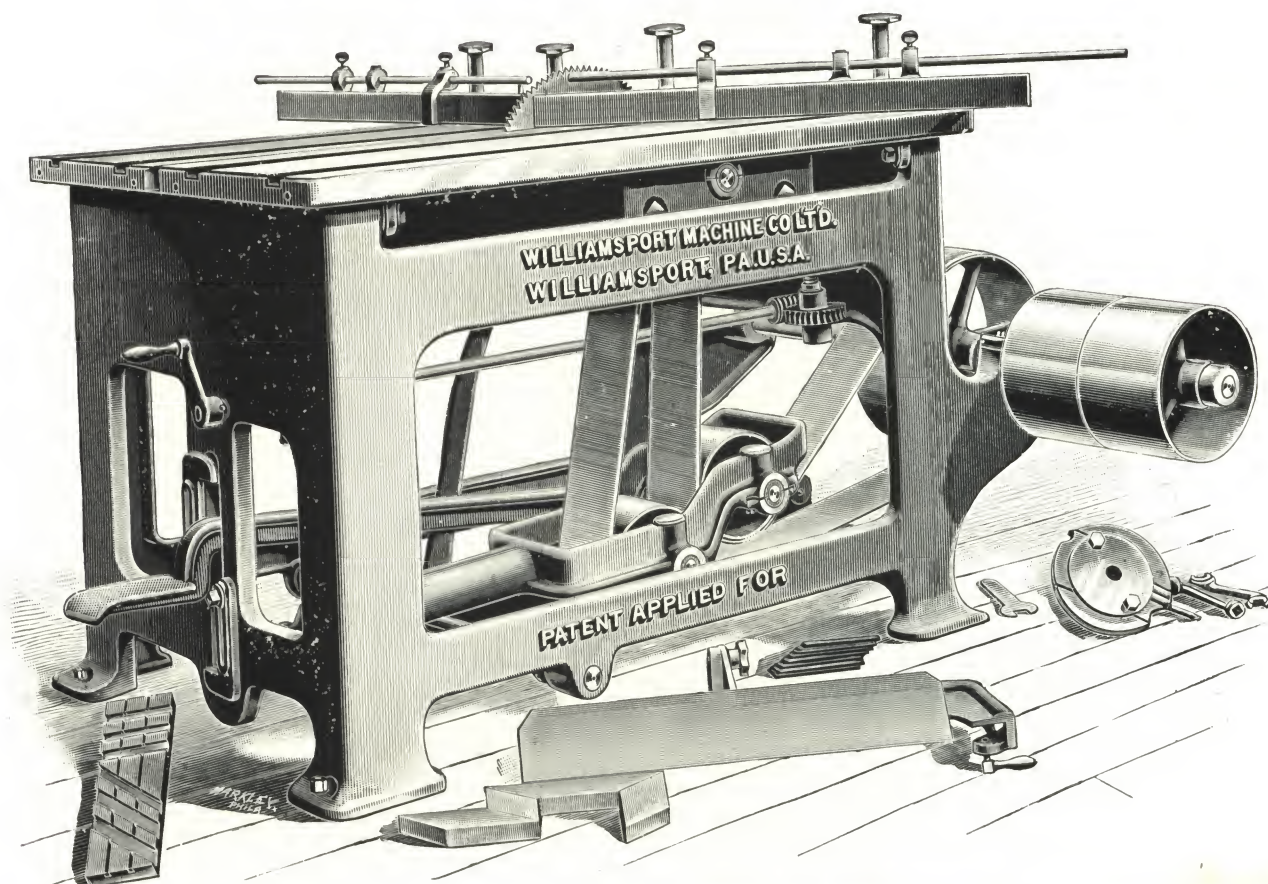
STYLE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 286 —With Borer and Counter-Shaft.....	8 x 4	500	500	Legible.
Fig. 286 A—With Borer, Without Counter-Shaft.....	.....	500	475	Legion.
Fig. 286 B—Without Borer, with Countershaft.....	8 x 4	500	450	Legless.
Fig. 286 B—Without Borer and Counter-Shaft.....	.....	500	450	Leisure.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 287.

WILLIAMSPORT MACHINE CO.'S

No. 3, Combination Saw and Dado Machine.



THE above cut represents our new **Combined Ripping, Cross-Cutting and Dadoing Machine**, which possesses many new and valuable improvements. In designing this machine we have used every means, regardless of expense, to make it the most economical of its class, i. e., a saw-bench which is capable of executing work with despatch and absolute accuracy, while the time required for adjusting the parts for different kinds of work is reduced to a minimum.

The Frame is one solid casting, with the metal so disposed as to form the most rigid support for working parts.

The Belt which transmits the power from counter-shaft to saw arbor is endless, of unusual length and width, and is strained by a tightener, placed in such a position that during the entire travel of the saw the tightener moves vertically less than three inches, thus producing an even tension at all times, the weight being sufficient to maintain the speed of the saw up to its full capacity. At the same time the belt is well preserved, as all the pulleys over which it passes are of large diameter, thus reducing the speed of tightener pulleys and extending the life of the boxes.

The Saw Carriage is mounted on rolls, and travels on a heavy, rigid frame, which is adjusted vertically to regulate the depth of cut by means of worm and worm wheels so constructed as to make a quick adjustment—a device which is perfectly accurate and not affected by sawdust or dirt.

The Saw, which is 14 inches in diameter, will cut up to four inches thick, and travels a distance of 24 inches. The length of travel and relative position of the saw and table, however, is controlled by the stops acting on the foot treadle at front of machine, as shown. The latter, an entirely new device for operating the saw, is provided with counter weights, which are adjustable in all directions. The system of levers is such that the foot need only be raised 10 inches off the floor to move the saw its full stroke—24 inches.

The Right Hand Table is arranged to swing upward, thus exposing the saw carriage and all surrounding parts, while the left hand table has a lateral adjustment sufficient to place or remove saws or dado head, and is absolutely accurate in its movement, thus preserving the alignment of tables and gauges at all times.

The Tables are graduated, and the cutting-off gauges may be set at any angle not exceeding 45 degrees. They are also fitted with tongues and auxiliary studs, which admit of using them either as stationary or sliding gauges; the change from one to the other may be made instantly.

The machine is also provided with a ripping gauge which is simple, effective and accurate, and can be set to any angle up to 45 degrees instantly, and it requires almost no time to apply it to the machine.

STYLE.	T. and L. Pulleys.	Revs. per Minute.	Floor Space Required.	Weight.	Code Word.
Fig. 287 —With Dado Head.....	10 x 5	900	50 x 73 inches.	1,600	Lender.
Fig. 287 A—Without Dado Head.....	10 x 5	900	50 x 73 inches.	1,600	Lenient.

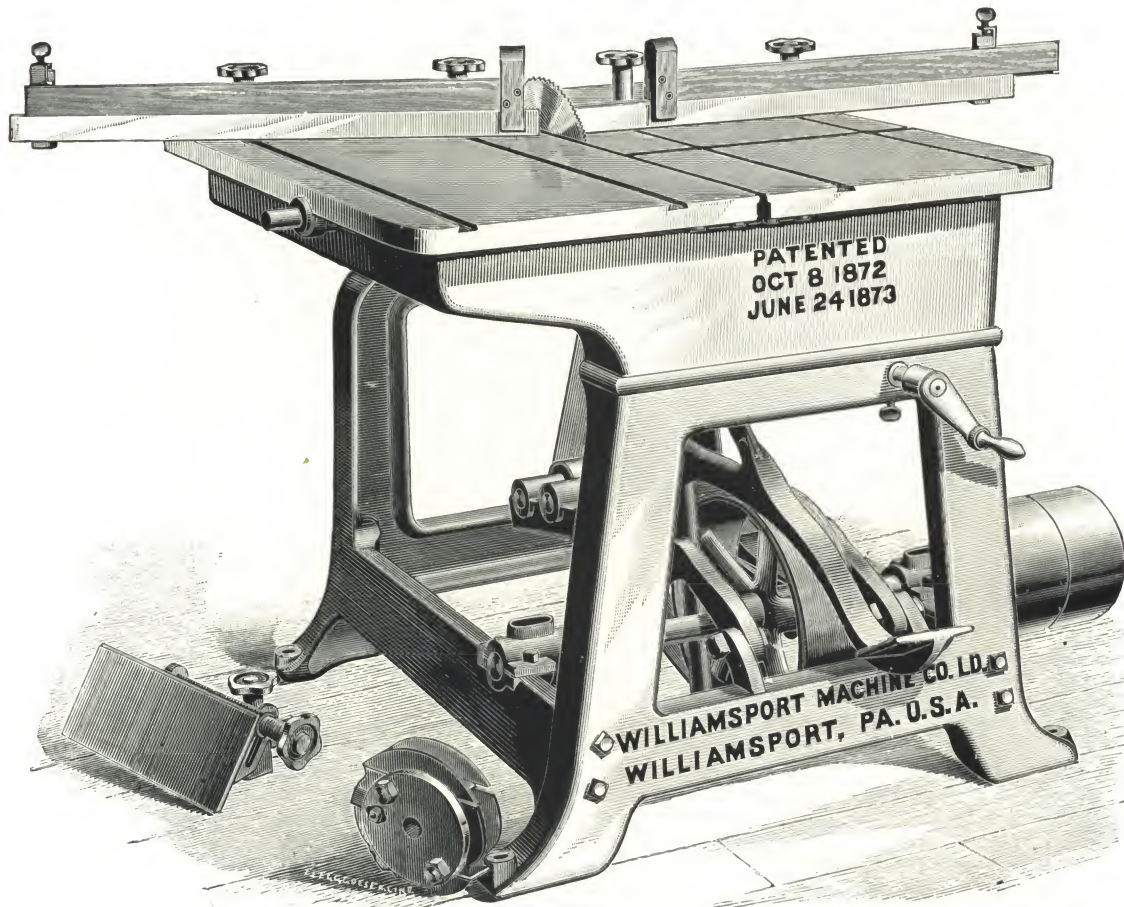
AMERICAN WOOD-WORKING MACHINE CO.

Fig. 288.

WILLIAMSPORT MACHINE CO.'S

No. 2, Combination Saw and Dado Machine.

WITH COMMON FOOT TREADLE.



THE above cut illustrates our new **Combination Saw and Dado Machine**, with common foot treadle. This machine has been designed for the purpose of ripping up lumber, sawing at any angle up to 45 degrees, plowing, grooving, dadoing and squaring up. Also used in the manufacture of door and window frames, and for mitering heavy moulding, furniture, work, etc. In fact it is the most complete machine ever offered to wood workers.

The Arbor is made of steel, and runs in babbitted boxes in a strong yoked carriage. This carriage is fitted with rollers, which travel on ways, thereby greatly reducing the friction. The ways are carefully fitted to the main frame of the machine, and are raised or lowered by worm or worm wheel, operated by the crank at front of machine. This makes a quick and positive adjustment and requires no set bolts to keep it just where it is wanted, as it can only move by turning the crank. When operating the machine the crank can be slipped off in an instant, if so desired. The machine is provided with hand-wheel on the side of frame for adjusting the sliding tops apart for using the dado head, changing saw, etc. This machine differs from the No. 1 Combination Saw in one respect only, viz.: It is in the device used in moving the carriage.

The Carriage is operated by placing the foot on the treadle and bringing the saw carriage forward at any rate, from 5 to 100 feet per minute, at the will of the operator, thus enabling the operator to regulate the feed for dadoing through knots, or cutting cross-grained lumber, etc.

By removing the pressure from the treadle, the saw carriage is returned to its position by the swing-tightener, which answers a double purpose; one is that it draws back the carriage to its proper position, and the other is that it keeps the driving belt always tight.

With each machine we furnish an endless driving belt, 12-inch cross-cut saw and cut-off and ripping gauges; and with the dado head, five sets of assorted cutters. The iron tops are laid out in degrees for cutting at any angle desired to 45 degrees.

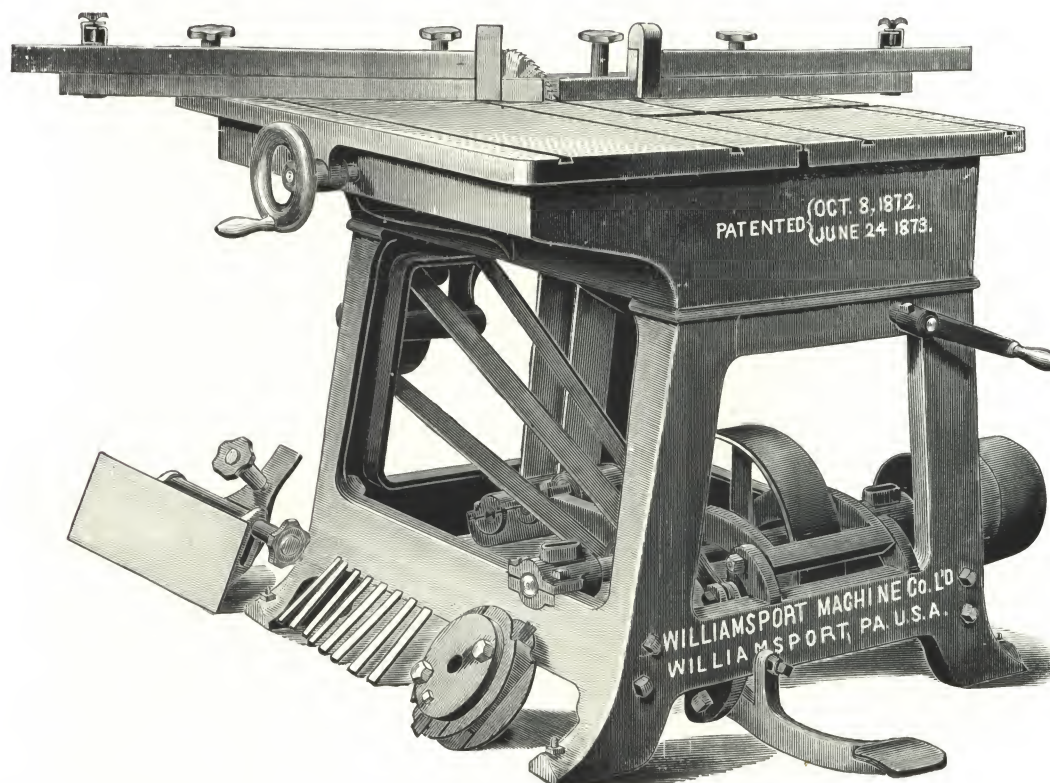
STYLE.	T. and L. Pulleys.	Revs. per Minute.	Floor Space Required.	Weight.	Code Word.
Fig. 288 —With Dado Head	8 x 4	900	3 ft. x 3 ft. 4 in.	1,000	Lenitive.
Fig. 288 A—Without Dado Head.....	8 x 4	900	3 ft. x 3 ft. 4 in.	1,000	Lentil.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 289.

WILLIAMSPORT MACHINE CO.'S

No. 1, Combination Saw and Dado Machine.



THIS Improved Combination Saw and Dado Machine is one of the most complete machines ever offered to wood-workers. It is intended for ripping, sawing at any angle to 45 degrees, plowing, grooving, dadoing, etc., and in fact is indispensable in the manufacture of door and window frames, mitering heavy mouldings, plowing and grooving door and window jambs, etc.

The Arbor is made of steel, and runs in babbitted boxes in a strong yoked carriage, fitted with rollers that travel on ways, which reduces the friction.

The Ways are fitted to the main frame of the machine and are raised or lowered by worm and worm wheel, operated by the crank at front of machine. This adjustment is positive and requires no set bolts to keep it just where it is wanted, as it can only move by turning the crank. When operating the machine, the crank can be slipped off in an instant, if so desired.

The Hand Wheels on sides of the machine are for adjusting the sliding tops apart for using dado head, changing saw, etc.

The Latest and most important point to which we would call your special attention is our friction device for moving the carriage. It is operated by the foot treadle which connects the power to the saw carriage and brings it forward at any rate from 5 to 100 feet per minute, at the will of the operator.

The Treadle is placed close to the floor so that the operator stands with heel on the floor and toe on the treadle, and by moving the treadle $\frac{1}{8}$ of an inch, connects the power and brings the carriage forward. By removing the pressure from the treadle, the power is disconnected and the carriage is returned to its position by the swing tightener, which answers a double purpose; one is that it draws the carriage back to its proper position, and the other, that it keeps the driving belt always tight. With each machine we furnish an endless driving belt.

The Iron Table tops are laid out in degrees for cutting at any angle desired to 45 degrees. Size of table, 3 ft. x 3 ft. 4 in.

STYLE.	T. and L. Pulleys.	Revs. per Minute.	Floor Space Required.	Weight.	Code Word.
Fig. 289 —With Dado Head	8 x 4	900	3 ft. x 3 ft. 4 in.	900	Leonine.
Fig. 289 A—Without Dado Head	8 x 4	900	3 ft. x 3 ft. 4 in.	900	Lepadite.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 290.

F. H. CLEMENT CO.'S

Sliding Gauge Double Cutting-off Saw Bench.



THE engraving represents a new and convenient Saw Bench, for accurately cutting off both ends of short stock, such as is found in Chair, Furniture, Sash and Blind, Carriage, and other works.

The Frame is in box form, well ribbed internally, and thus not liable to spring or twist.

The Saw Arbor is of steel, $1 \frac{1}{8}$ inches diameter and runs in long self-oiling boxes which are rigid on the frame at each end.

Two Turned Steel Bars support the narrow tables, and the sliding gauges; these bars are also rigidly secured to the frame, and cannot vibrate.

The Tables are $5 \frac{1}{2}$ inches wide and 48 to 60 inches long, and can be adjusted to any point on the side rods between the saws; or for very short work one saw may be located between the tables. They can be tilted up to slip a saw under, and when required, an adjusting screw can be supplied at a slight extra charge.

The Gauges are fitted to swivel to 45 degrees and are attached to long tongues which move in slots in each table. For long work they are tied together by a rigid bar which is slotted at both ends for adjustment.

The Saws are bolted to the face of the collars and they may be slipped along the arbor and secured to any point by means of a concave key and set-screw; they can be removed for sharpening in a few seconds. Saws from 12 inches to 16 inches diameter may be used.

A Dadoing Attachment can be made for this machine at a moderate expense.

The Workmanship is excellent in every particular, and the machine is very rigid and accurate in all details.

The Counter-Shaft is steel and has our "jump flange" self-oiling loose pulley, and can be located in any required position.

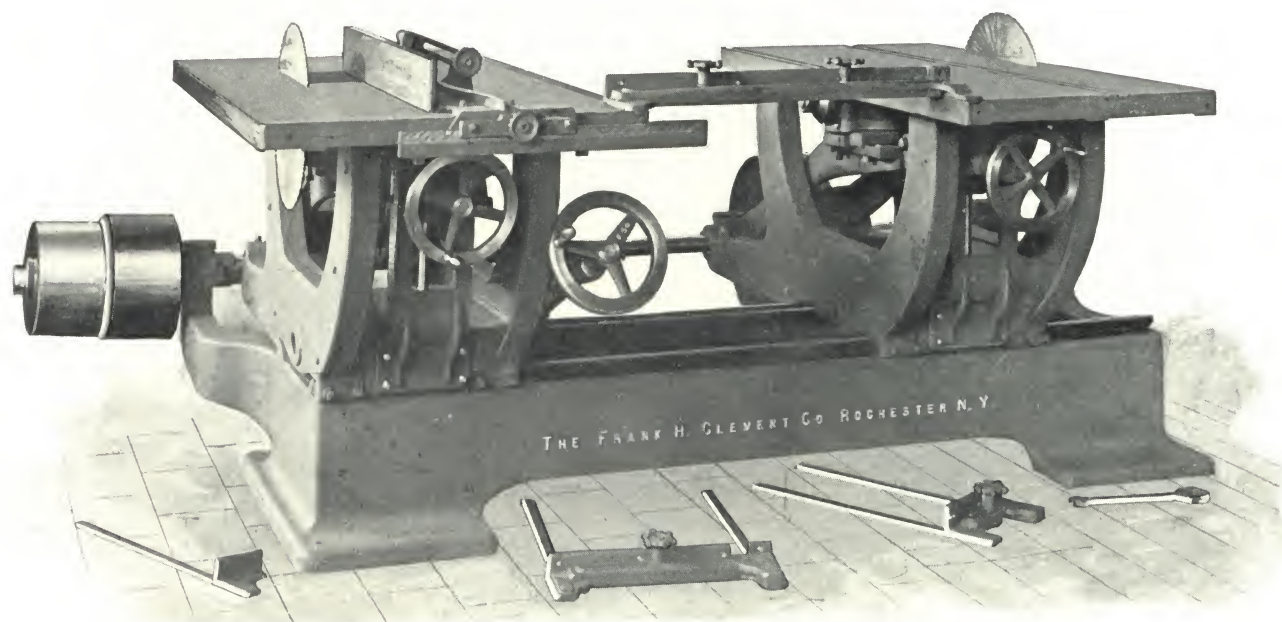
STYLE.	T. and L. Pulleys.	Revs. per Minute.	H. P. Required.	Weight.	Code Word.
Fig. 290—Cuts off 6 inches to 42 inches.....	12 x 6 $\frac{1}{4}$	750	3	1,350	Leporine.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 291.

F. H. CLEMENT CO.'S

Improved Double Cut-off Saw.



PATENT PENDING.

THIS is an entirely new design, embracing many improvements which have been suggested by experience. **The Bed** is very heavy and rigid and has three bearings on the floor, preventing twisting and consequent derangement of the table alignment.

The Head Blocks are cast in one piece with four tie bars in each, and bearings for the counter-shaft in the rear.

The Arbors run in self-oiling boxes with return channels, and the yoke carrying the boxes is adjustable vertically and horizontally; in addition to this it has a longitudinal adjustment on planed ways to take up the slack of the belt by means of a screw. This is not found on any other similar machine.

The Arbor Frames or saddles swing vertically on trunion pins at the rear and are guided on vertical ways in front with screws and hand wheels for adjusting them; thus the saws are kept perfectly rigid in the cut.

The Tables are planed perfectly true and firmly bolted to the head block and have longitudinal grooves to receive the gauge tongues. The left hand table is provided with a rip-gauge, moving on an adjustable track attached to the edge of the table. This gauge is adjustable for bevel sawing to 45 degrees.

The Cut-Off Gauges consist of one expansion gauge for general work, adjustable for various lengths up to full capacity of the machine, and one swivel gauge adjustable to 45 degrees either way. The expansion gauge takes the place of all the double tongue gauges shown in cut.

The Counter-Shaft is turned steel and has four bearings: the tight and self-oiling loose pulleys are 12 x 6¼ inches and should run about 600 per minute for 16-inch saws.

The Capacity of the machine is from 5 inches to 6 feet 9 inches in length, 4 inches thick, and 21 inches wide, but this latter can be increased to 24 inches or 30 inches on order.

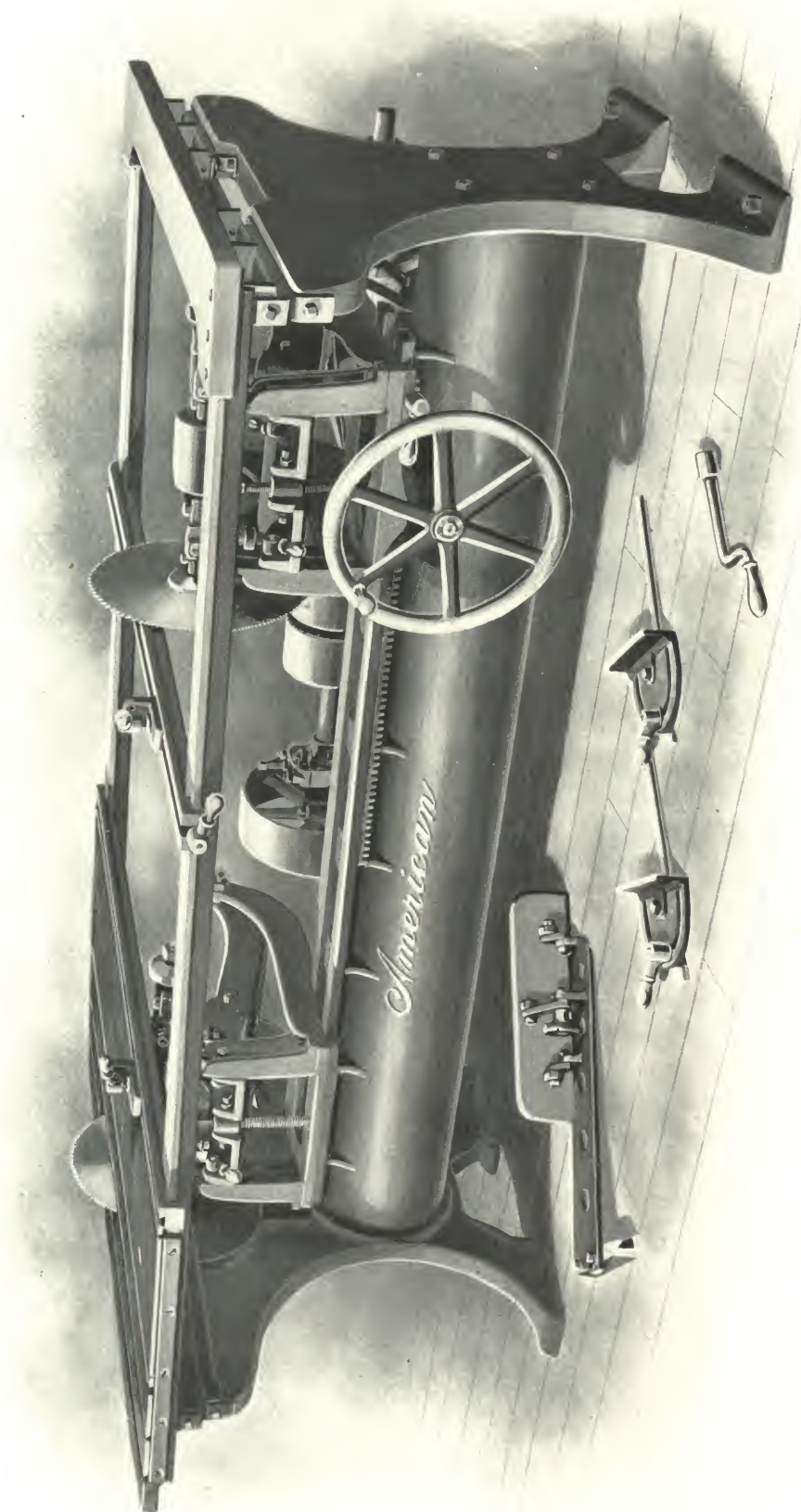
The Workmanship is of the same character as all our output, viz.: *The Best.*

STYLE.	T. and L. Pulleys.	Revs. per Minute.	H. P. Required.	Weight.	Code Word.
Fig. 291—Improved Double Cut-off Saw	12 x 6¼	600	2 to 5	3,200	Leprosy.

Fig. 292.

YOUNG BROS.'

No. 2, Light Double Cut-off Saw.



Many factories require a medium priced Double Cut-off Saw Bench, which is simple in construction, easy and accurate in operation. The two forms of this machine should meet the above conditions. See opposite page for further description.

Fig. 293.

YOUNG BROS.,

No. 1, Double Cut-off Saw.



THE Frame consists of a hollow cylindrical bed, to the ends of which supporting legs are bolted, making an unusually rigid construction. The Cut-off Carriage has anti-friction bearings on the ways, which rests upon the top of the supporting legs. It is light and strong, and moves easily, and may be adjusted to line with the saws.

The Head Blocks are secured to a planed way, cast on the cylindrical bed, one being gibbed thereon and adjustable longitudinally, by means of rack and pinion and hand wheel. The Saw Arbors are of hard steel, $1\frac{3}{8}$ inch in diameter, and the bearings are extra long, of best babbitt metal and self-oiling.

Gauge Bars or Saddles are provided on the carriage, which are adjustable along the side rails to support the work at the right point with reference to the saws.

Two Forms of this machine are made: Fig. 293 represents the simple Cut-off Saw Bench with arbors adjusted horizontally only; Fig. 292 shows a more complicated form in which the arbors and saws are adjustable vertically as well as horizontally; and there is also provided a hard wood table over the stationary head block, having a rip-gauge attachment and ways for using short cross-cut gauges.

The Arbor Frames in Fig. 292 swing on trunnions at the rear of the machine, and are adjustable vertically in front by screws, and the arbor boxes are adjustable for alignment in both directions, so as to permit of adjusting the saws with reference to each other and to the carriage.

Capacity: 6 feet 6 inches long, 24 inches wide, and 4 inches thick.

A complete counter-shaft is furnished, and an improved self-oiling loose pulley is used. Two saws are furnished.

STYLE.

Fig. 293—No. 1, Double Cut-off Saw, complete.....

Fig. 292—No. 2, Double Cut-off Saw, complete.....

T, and L, Pulleys.	Revs. per Minute.	H. P. Required.	Weight.	Code Word.
12 x 6 $\frac{1}{4}$	600	4	1,600	Lesbian.
12 x 6 $\frac{1}{4}$	600	4	2,000	Lesson.

Fig. 294.
 GOODELL & WATERS'

Large Size Carriage Cut-off Saw Bench.

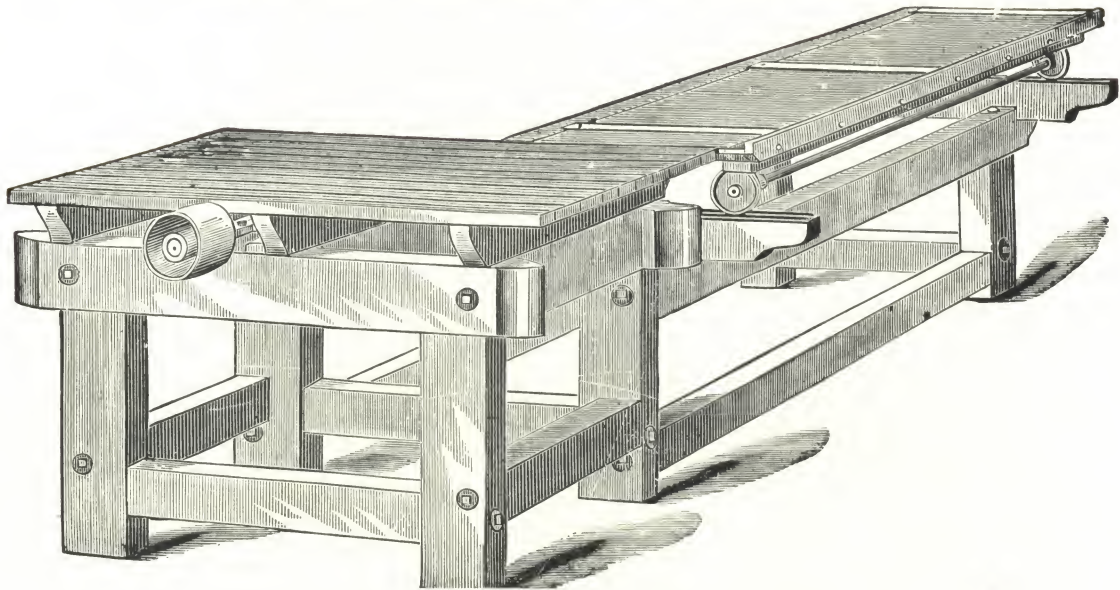


Fig. 295.
 GOODELL & WATERS'

Rip and Large Cut-off Saw Table.

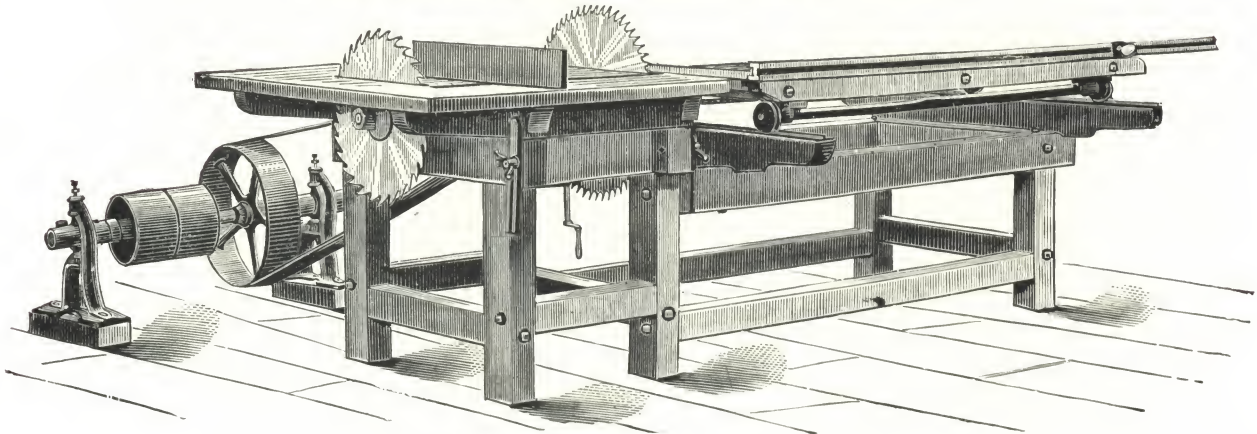
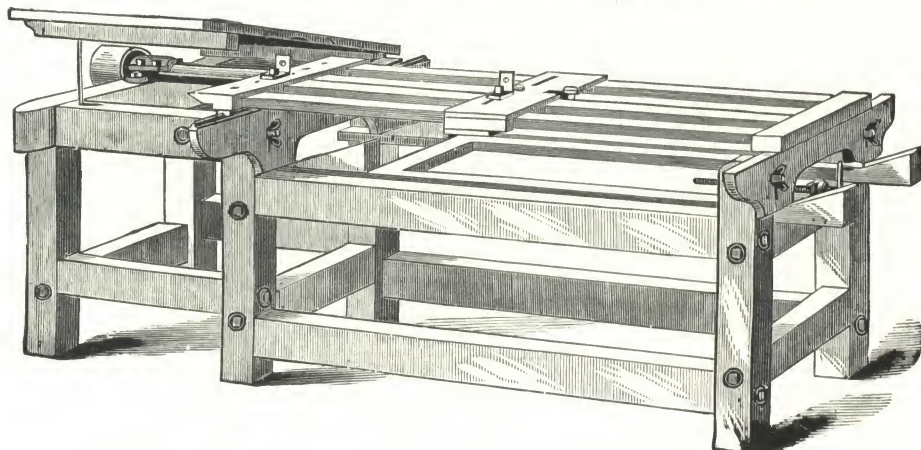


Fig. 296.
 GOODELL & WATERS'

Sash and Door Cut-off Sawing Machine.



STYLE.
 Fig. 294—Large Size Carriage Cut-off Saw Bench.....
 Fig. 295—Rip and Large Cut-off Saw Table.....
 Fig. 296—Sash and Door Cut-off Sawing Machine.....

Code Word.
Leucine.
Level.
Leverage.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 297.

LEVI HOUSTON CO.'S Heavy Swing Saw.

THE accompanying cut represents our **Heavy Swing Cut-off Saw**, which is specially adapted for use in car shops for cutting off heavy car timbers, and in saw mills for cutting off slabs and shingle butts, and in all factories where heavy stuff is required to be cut into equal lengths with perfectly square ends.

With our **Patent Counter-Balance** we have overcome what has heretofore been the greatest objection to swing saws, that of having the ponderous weight used as a counter-balance always to lift in operating the saw. By examining the accompanying cut it will be seen that the operator is not only relieved from lifting the weight of the counter-balance, but it actually aids him in pulling the saw through the lumber.

The Frame is made on the most modern scientific principles, combining strength and rigidity, while it is at the same time light. It is cast all in one piece, with a cored center, and is warranted to stand greater tortive strain than any other swing saw made.

The Shaft which the saw swings on is stationary—set-screwed in the hanger, as shown in the cut. It will be seen that this tends to make it perfectly rigid, and not liable to get out of line.

The Pulley that runs the saw and the driving pulley are fastened together on an oil-chambered sleeve, thus leaving all pulleys virtually loose on the counter-shaft. The saw being once properly placed, remains so, there being no journals to wear or throw it out of line.

The Cut shows position of weight when the saw is back of the guide.

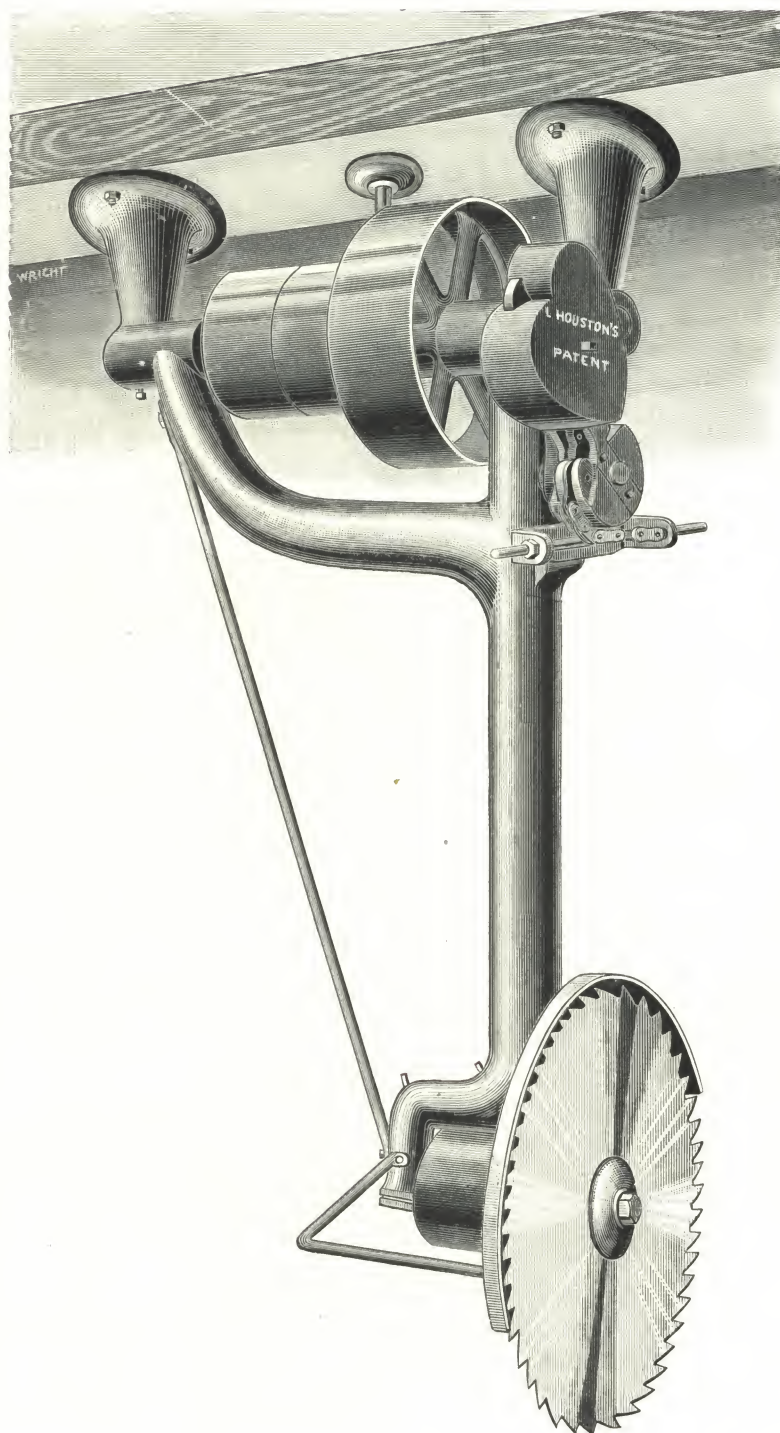
This Saw works equally as well under the bench as above it. Please state in order whether wanted to work above or under the bench.

Regular length from base of hangers to center of arbor, 7 feet 2 inches, but can make it any required length and right or left hand.

Weight of Saw, crated ready for shipment, 1,400 pounds. Saw arbor, $1\frac{3}{4}$ inches diameter; counter-shaft, $2\frac{1}{2}$ inches diameter.

The hangers are adjustable to take up the wear of the saw. Belts need not be cut.

Graphite bearings for pulleys on counter-shaft at extra cost, if wanted.



STYLE.
Fig. 297—Heavy Swing Saw

T. and L.
Pulleys.
12 x 8

Revs. per
Minute.
420

Weight.
1,400

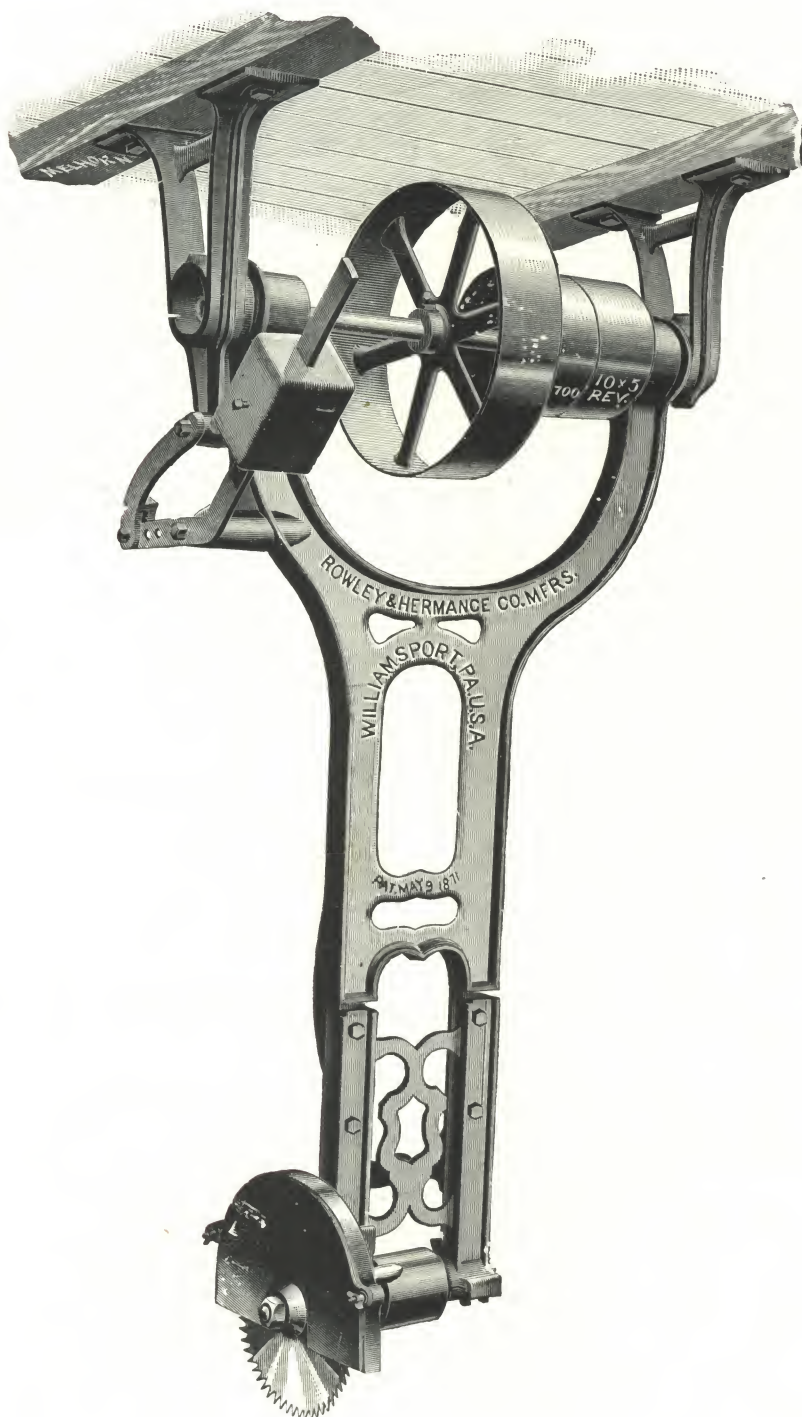
Code Word.
Levron.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 298.

ROWLEY & HERMANCO CO.'S

Improved New Patent Swing Cut-off Saw.



THIS Machine is entirely new, and has the following advantages over any other Swing Saw before made.

The Frame swings upon the *hangers*, instead of upon the counter-shaft, as in other machines.

The Hub on the hanger is turned, and the top of the frame is babbitted to fit, thereby securing accurate cross cutting.

It is Adjustable for different heights of ceiling, as the saddle holding the arbor has a sliding adjustment of five inches.

Being Adjustable, the saw can be used entirely up.

The Saw is protected by a shield.

The Machine is also provided with an improved counter-balance, which holds the saw in any desired position. When the saw has been drawn forward and the cut completed, a slight push returns the frame to its normal position, where it will remain, as shown in cut.

The great objection to swing saws has been that accurate sawing was impossible. With the above arrangement we have overcome the difficulty. We furnish one 14-inch saw and shield with machine. Distance from base of hanger to center of arbor, at highest point, 6 feet, 7 inches.

STYLE.	T. and L. Pulleys.	Revs per Minute.	Cubic Measurement.	H. P. Required.	Weight.	Code Word.
Fig. 298 —No. 1, Swing Cut-off Saw.....	10 x 5	700	68	1 to 2	500	Levigatè.
Fig. 298 A—No. 2, Swing Cut-off Saw.....	10 x 5	700	74	2 to 3	600	Lewdly.

Fig. 299.

LEVI HOUSTON CO.'S

Improved Swing or Slash Saw.

THE cut on the right represents our **Swing Cut-off Saw**. The increasing demand for swing saws for planing, sash, door and blind mills and box factories, and cutting slabs in saw mills, in fact, for all mills where lumber is to be cut into equal lengths with square ends has induced us to put this tool in the market, as we consider it one of the best built.

With patent counter-balance we have overcome what has heretofore been the greatest objection to swing saws, that of having the ponderous weight, used as a counter-balance, always to lift in operating the saw. By examining the accompanying cut will be seen that the operator is not only relieved from lifting the weight of the counter-balance, but it actually aids him in pulling the saw through the lumber, thereby making it as easy to cut off a board 30 inches wide as one only 4 inches.

The Frame is made on the most modern scientific principles, combining strength and rigidity, while it is at the same time light. It is cast all in one piece with a cored center, and is warranted to stand greater tortive strain than any other swing saw made.

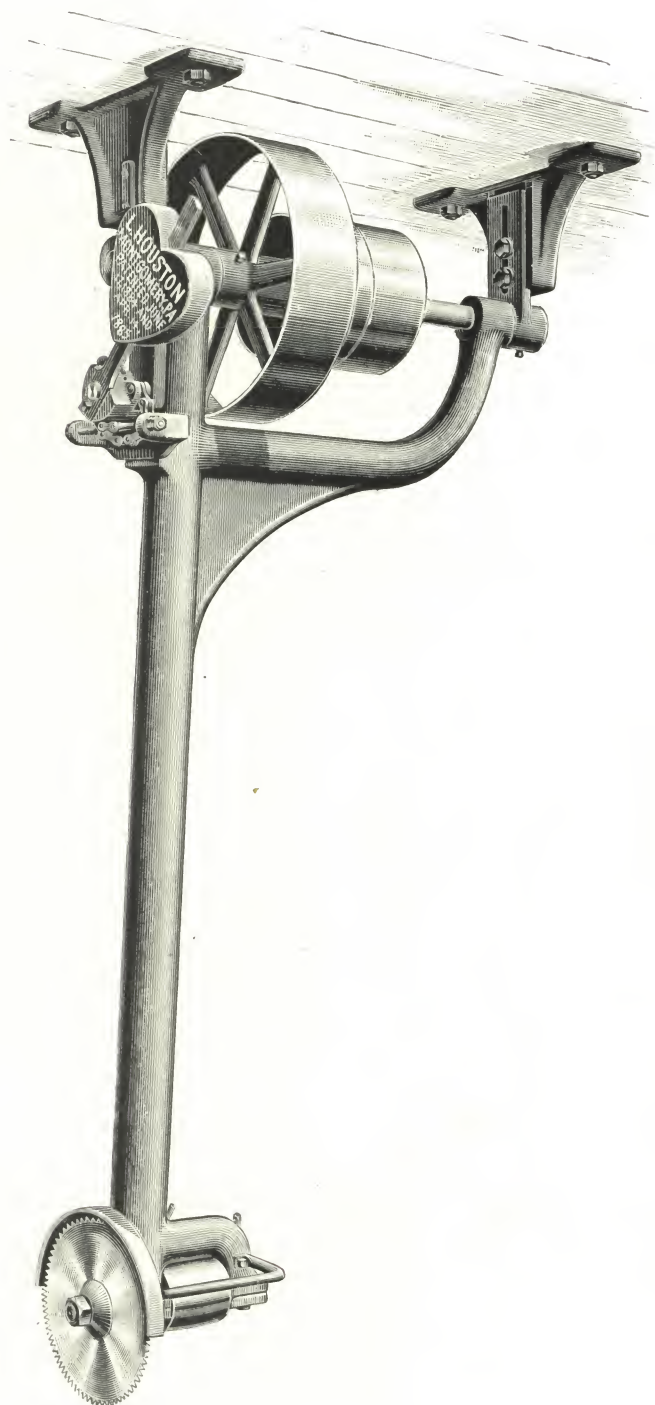
The Shaft which the saw swings on is stationary—set-screwed in the hanger as shown in the cut. It will be seen that this tends to make it perfectly rigid, and not liable to get out of line.

The Pulley that runs the saw, and the driving pulley are fastened together on an oil-chambered sleeve, thus leaving all pulleys virtually loose on the counter-shaft. The saw being once properly placed, it remains so, there being no journals to wear and throw it out of line.

The Cut shows position of weight when the saw is back of the guide.

The Hangers are made adjustable to take up the wear of the saw. This adjustment requires no cutting of belt.

Regular length from base of hangers to center of arbor, 7 feet 2 inches, but can make it any required length and right or left hand.



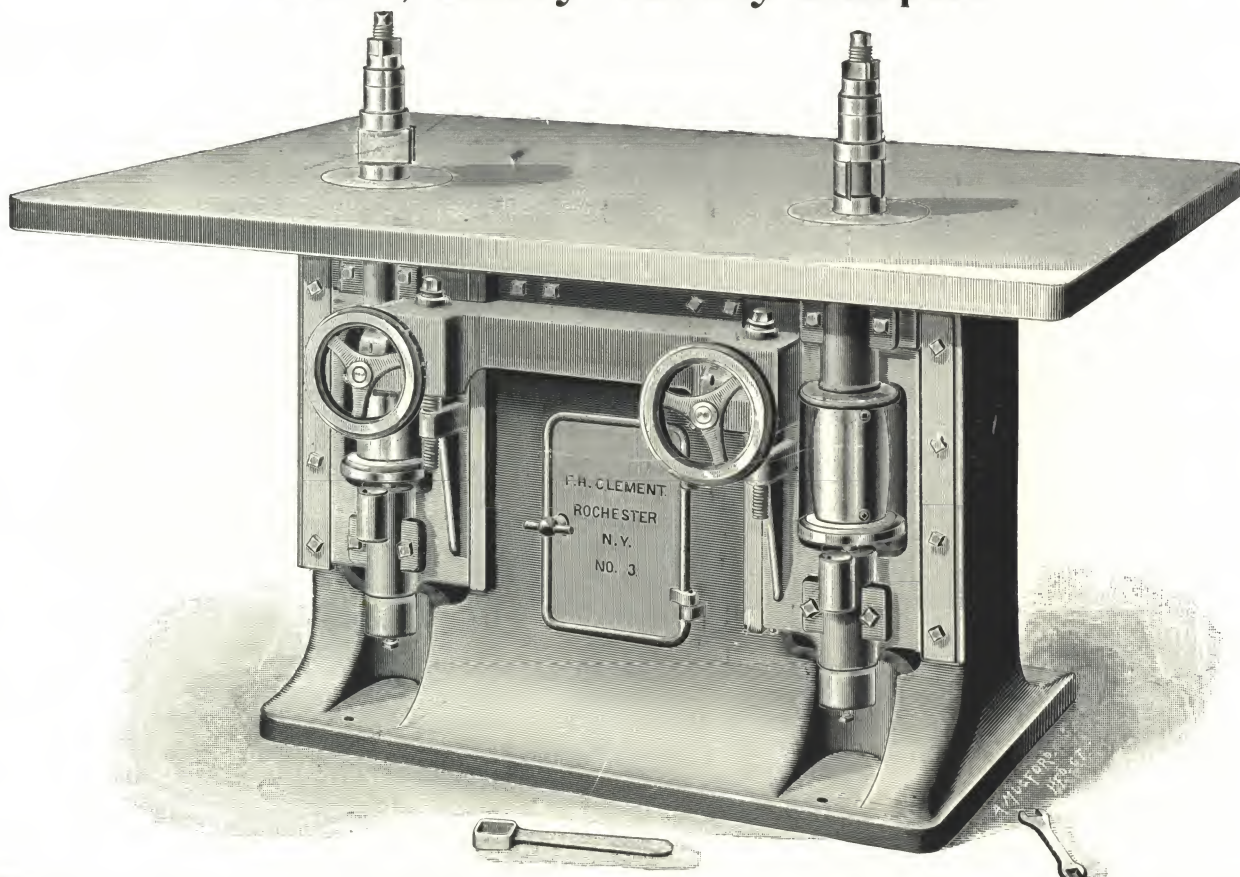
STYLE.
Fig. 299—Improved Swing or Slash Saw.....

T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
10 x 5	500	500	Lexicon.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 300.

F. H. CLEMENT CO.'S No. 3, Heavy Variety Shaper.



THIS is an extra heavy carefully designed machine, adapted to the heaviest work demanded of any Shaper, such as Furniture, Wagons, Carriages, Cars, Plow Beams, Agricultural Machines, Railroad work, etc.

The Frame is cast in one piece, in box form, and is very rigid and heavy. It extends beyond the main spindle yokes at each side, and the belts pass through it, thus giving the boxes and spindles the utmost solidity. There is a closet for knives, wrenches, etc., and the table is firmly bolted to a broad top flange which nearly surrounds both spindles. Cutter heads or collars 6 inches diameter can be used if required.

The Main Spindles are 2 inches in diameter in the body and $1\frac{3}{8}$ inches on top sections, with ground journals, and are set 30 inches apart. The upper bearings are 9 inches long and the connecting yokes are very heavy and supported for their whole length in V slides with take-up gibs, all carefully scraped to a solid bearing. There is also a clamp handle on each gib (not shown), to bind the yokes firmly after adjusting. The result of this construction is unusual rigidity under the heaviest cutting in hard wood. The box caps are planed into ledges to avoid side motion, and have self-oiling attachments, and the lower ends of the spindles run in a well of oil upon a bronze step with an adjusting screw.

Separable Top Spindle Sections are provided when ordered, from $\frac{5}{8}$ inches diameter to $1\frac{3}{8}$ inches or more if required with square threads for the clamping nuts. Two sets of steel collars slotted for knives, four filling collars and one set of four blank knives are furnished with each machine, and one pair of table rings.

The Adjusting Screws for the yokes are hung in a strong housing

extending across the front of the machine, and the adjusting wheels are convenient for the operator at his work.

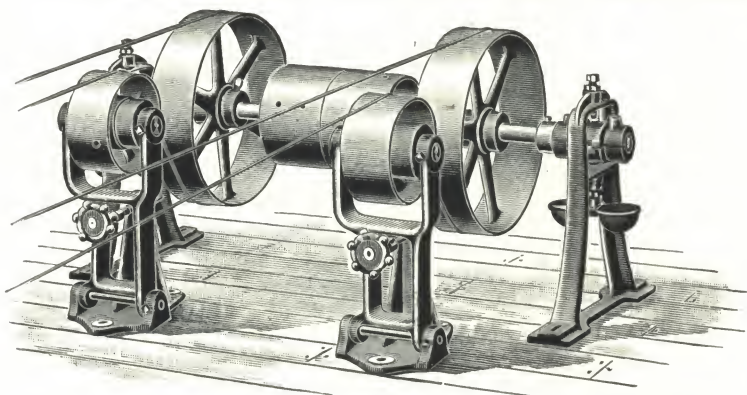
The Table is usually 42 x 62 inches surface, of kiln-dried cherry glued up in strips, or iron if ordered (the latter extra) and both have separable rings around the spindles, the bore of which is adapted to the collar or cutter required.

Fig. 301.

Special Counter-Shafts.

We furnish, when ordered as extras, one pair of Guide Stands, having self-oiling loose pulley on an adjustable arm, for guiding the spindle belts and taking up the slack independently of each other.

The adjustment can be made while the machine is running by means of the screw and hand-wheel.



STYLE.

Fig. 300 —No. 3, Heavy Variety Shaper, Wood Table.....	T. and L. Pulleys. 10 x 6 1/4
Fig. 300 A—No. 3, Heavy Variety Shaper, Iron Table.....	10 x 6 1/4
Fig. 301 —Guide Stands, per pair, extra.....	

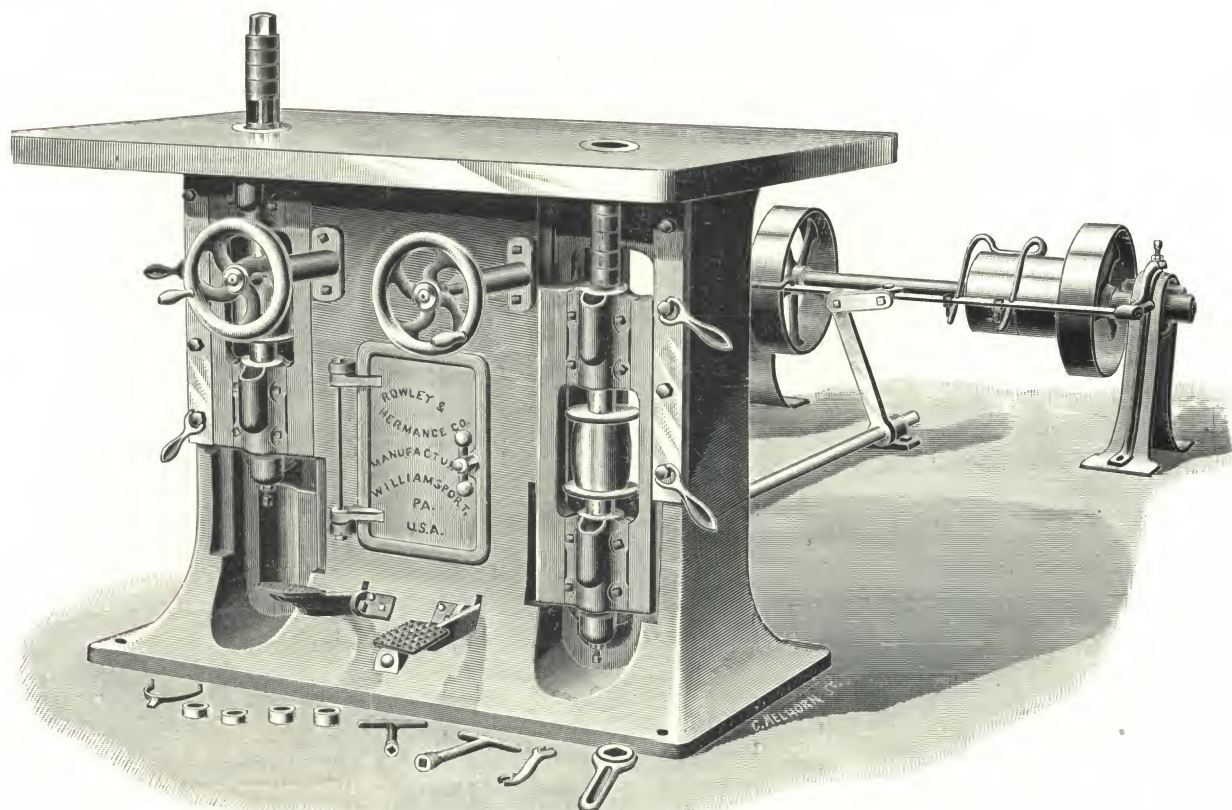
Revs. per Minute.	H. P. Required.	Weight.	Code Word.
1,000 to 1,200	2 to 4	1,700	Libation.
.....	2 to 4	2,000	Library.
.....	.....	.....	License.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 302.

ROWLEY & HERMANCE CO.'S

New Pattern Two-Spindle Edge Moulder and Shaper.



A STRONG, durable machine of excellent design, with points of superiority over any other machine of its kind yet produced. **The Frame** is heavy, cored out and cast in one piece, making it very rigid. It extends beyond the headstocks that carry the spindles, allowing sufficient space for the belts to pass through.

A Closet within the frame provides a convenient place for collars, knives and wrenches.

The Spindles are of the best steel, $1\frac{5}{8}$ inches in diameter, 26 inches between centers, perfectly balanced, and run in long self-oiling bearings, with V grooves in ends, and rest on adjustable copper steps, encased in oil to prevent heating, and are raised or lowered with hand wheels convenient to the operator.

Either Spindle can be dropped below the surface of the table.

The Spindles can be made to receive different sized stems if desired, at a slight additional cost.

The Headstocks are dovetailed in the frame and when set in position are held perfectly rigid by an entirely new device, making them as rigid as the frame itself, thus insuring perfectly smooth work.

The Table is of iron, very heavy, and planed perfectly true. It can be made of wood if ordered. Wood tables are made of alternate cherry and maple strips glued together, with long bolts passing entirely through the width of the table.

The Table is 38 x 50 inches and has brass rings inserted around the spindles.

The Counter-shaft is provided with a belt-shifter attached to a rod that passes through the frame, to which is connected a foot treadle so that the operator can shift the belt without leaving his work.

This new feature will be appreciated by practical purchasers.

We furnish with each machine one set of grooved collars, one set of straight knives, spanner and necessary wrenches.

Fig. 303.

LEHMAN MACHINE CO.'S

Two-Spindle Edge Moulder and Shaper.

Our Two-Spindle Edge Moulder is quite similar to the one shown in the above cut, except it is 28 inches between centers. It is found to be a strong, durable machine of excellent design.

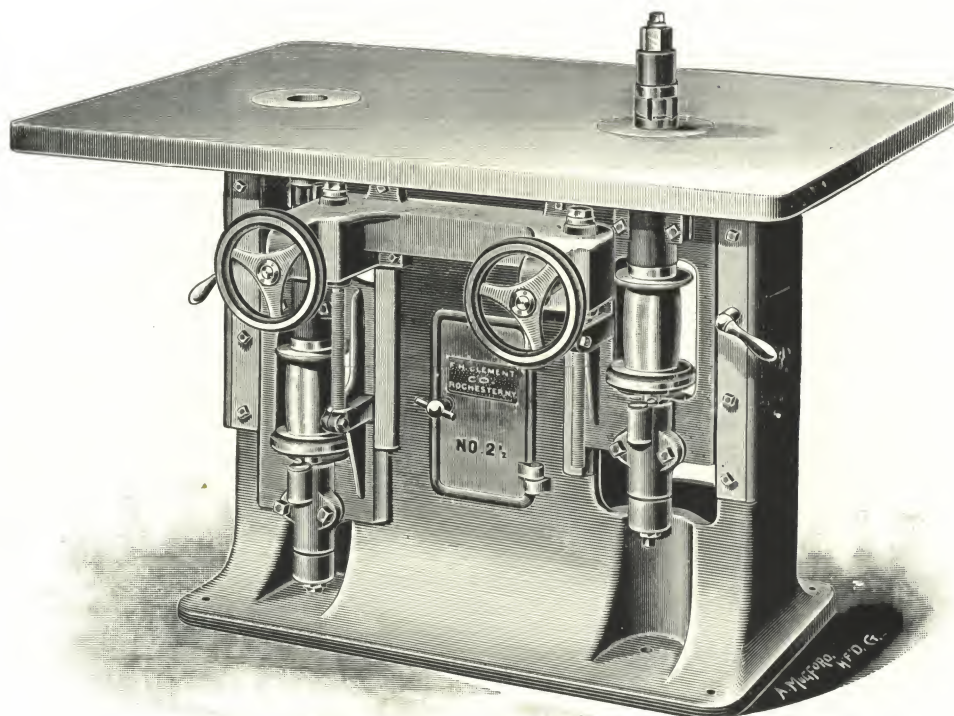
STYLE.	T. and L. Pulleys.	Revs. per Minute.	Cubic Measurement.	Weight.	Code Word.
Fig. 302 —26-inch, with Iron Top.....	8 x 5	950	63	1,600	Licking.
Fig. 302 A—26-inch, with Wood Top.....	8 x 5	950	63	1,550	Liege.
Fig. 303 —28-inch, with Iron Top.....	8 x 5	950	63	1,600	Lifelike.
Fig. 303 A—28-inch, with Wood Top.....	8 x 5	950	63	1,550	Lifter.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 304.

F. H. CLEMENT CO.'S

No. 2½, Double Variety Shaper.



WITH PEDAL BELT SHIFTER (NOT SHOWN.)

THIS is a fine, high class, carefully designed and nicely fitted machine in all its details.

The Frame is cast hollow in one piece, and is strong and massive. There is a closet in it for knives, collars, wrenches, etc., and the table is firmly bolted to a heavy flange at the top.

The Main Spindles are of cast steel, 1½ inches in diameter, with ground journals, and they are set 24 inches apart. The bearings are 7 inches long, and are connected by a heavy yoke which moves vertically on V's cast on the face of the frame. These parts are specially heavy and rigid, and are so fitted that, with ordinary care of the boxes, there can be no vibration or heating of the spindles. The utmost care is used in every process of the preparation of these spindles and we guarantee them accurate in every detail when they leave our works.

Either Spindle may be dropped entirely below the level of the table as shown in the engraving.

Separable Top Spindle Sections are provided when ordered, but usually the upper end of the spindles is turned down to 1½ inches, with a fine square thread for the clamping nut. Four steel collars, slotted for knives, and two filling collars are furnished on each spindle, and one set of blank knives.

The Adjusting Screws and gearing are located in housings, firmly bolted to the frame, and convenient to the operator to reach while measuring from the top of the table. These parts are carefully fitted, and there is a clamping handle on each gib so that the jar of the belts or the work, will not change the adjustment, or permit vibration in the slides.

The Table is usually 40 x 54 inches, of kiln-dried cherry, glued up in strips, dressed true and finished in shellac; but an iron table will be furnished when wanted, at an additional price. Iron rings, seven inches outside diameter, surround the spindles, and will fit in any table, either iron or wood.

The Counter-Shaft has tight, and our new self-oiling loose pulley. Extra spindle-sections and collars to order.

Special Counter-Shafts. We furnish, when ordered as extras, one pair of Guide Stands, having self-oiling loose pulley on an adjustable arm, for guiding the spindle belts and taking up the slack independently of each other. The adjustment can be made while the machine is running by means of the screw and hand-wheel.

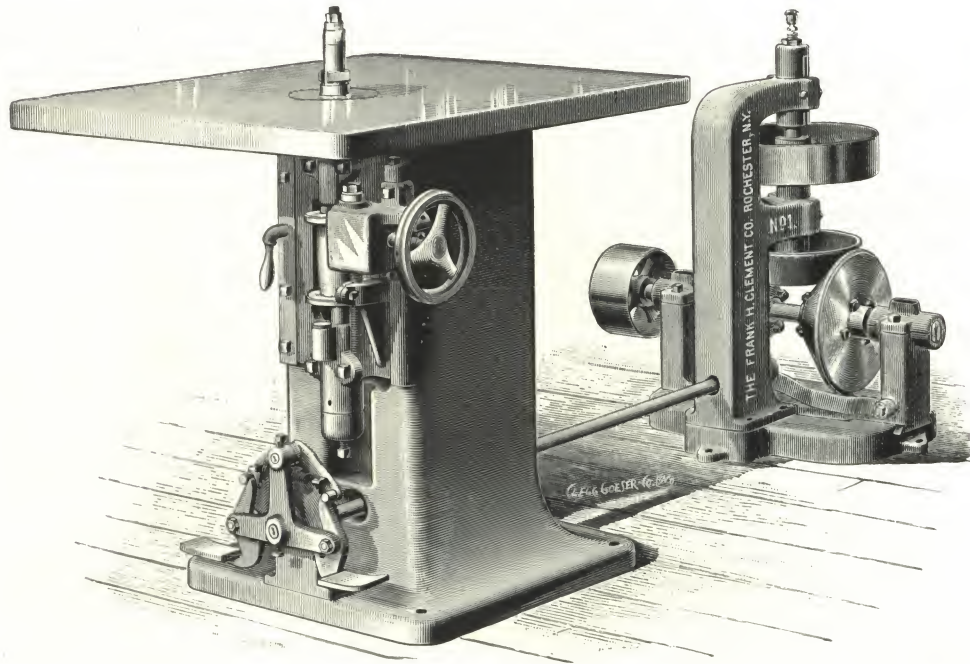
STYLE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 304 —Shaper Complete, Wood Table and Plain Counter-Shaft.....	8 x 5¼	1,000 to 1,200	1,000	Ligature.
Fig. 304 A—Shaper Complete, Iron Table and Plain Counter-Shaft.....	8 x 5¼	1,000 to 1,200	1,250	Lightfoot.
Fig. 304 B—Guide Stands, per pair, extra .....	.....	.....	.....	Lightly.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 305.

F. H. CLEMENT CO.'S

No. 1, Improved Reversible Shaper.



THE large demand for a machine of this kind has induced us to bring out a new design, containing many valuable features not found in other shapers.

The Frame is cast entire in "box" form, and is usually heavy and rigid; the slide ways are cast upon it, and there is a heavy flange at the top to which the table is bolted.

The Spindle is of crucible steel, one and one-half inches in diameter, and the journals are six inches long and are carefully ground true (not filed), and finely polished; the boxes are scraped to the journals so they will not heat when started, and do not have to wear down to a bearing.

The Boxes are cast in a strong yoke, which is carefully scraped to ways on the frame, and the take-up gib is provided with a clamp screw, which binds the yoke to the frame firmly. There are self-oiling cups on the caps, and the latter are planed into ledges to prevent side motion.

The Table is usually of iron but can be of wood if ordered, and is provided with a removable centerplate surrounding the spindle.

The Shifter Pedal is a new departure and is self-locking and self-releasing; thus the whole force of the frictions is made positive and retained in action as long as desirable, without any effort from the operator.

The Counter-Shaft is of steel having two compressed paper frictions engaging with an iron wheel on the vertical shaft; the latter has bearings on both sides of the driving pulley and a self-oiling step for end pressure. The boxes of the main shaft are cast together and slide in planed ways in the base plate to reverse the frictions. As a practical working device this counter-shaft has no equal.

Parts Furnished: One detachable upper spindle section, nine guide collars, one table ring, counter-shaft complete, five feet of shifter shaft with attachments, one pair of plain shaper knives or one reversible cutter.

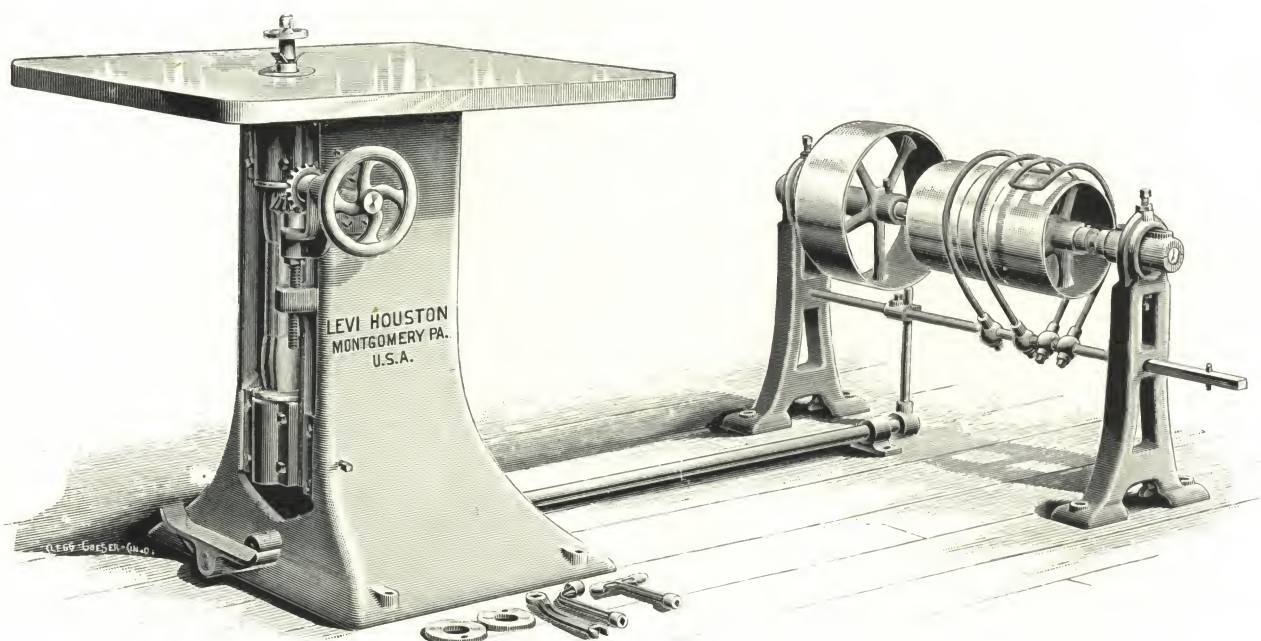
STYLE.	T. & L. Pulleys.	Revs. per Minute.	H. P. Required.	Weight.	Code Word.
Fig. 305 —With Iron Table and Counter-Shaft.....	8 x 4½	1,000	3	1,000	Ligulate.
Fig. 305A—With Wood Table and Counter-Shaft.....	8 x 4½	1,000	3	.....	Ligurate.
Fig. 305B—Dove Tailing Attachment, extra.....	.....	.....	.....	.....	Lilach.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 306.

LEVI HOUSTON CO.'S

Improved Single Spindle Reversible Shaper.



THE above cut shows our New Single Spindle Reversible Shaper and Edge Moulder.

The **Frame** is cast in one solid piece, hollow, well proportioned for strength and rigidity.

The **Table** is iron, accurately planed and fitted. The frame carrying the spindle is heavy and substantially gibbed to the main frame and is adjustable vertically by means of the hand screw in a convenient position at side of the machine.

The **Spindle** is quickly and easily reversed by means of the foot treadle at base of the machine, readily accessible to the operator; and the spindle is made of the best steel.

The **Counter-shaft** is provided with one tight and two loose pulleys to receive two driving belts; one is open and the other a cross-belt. The table is 34 inches by 38 inches.

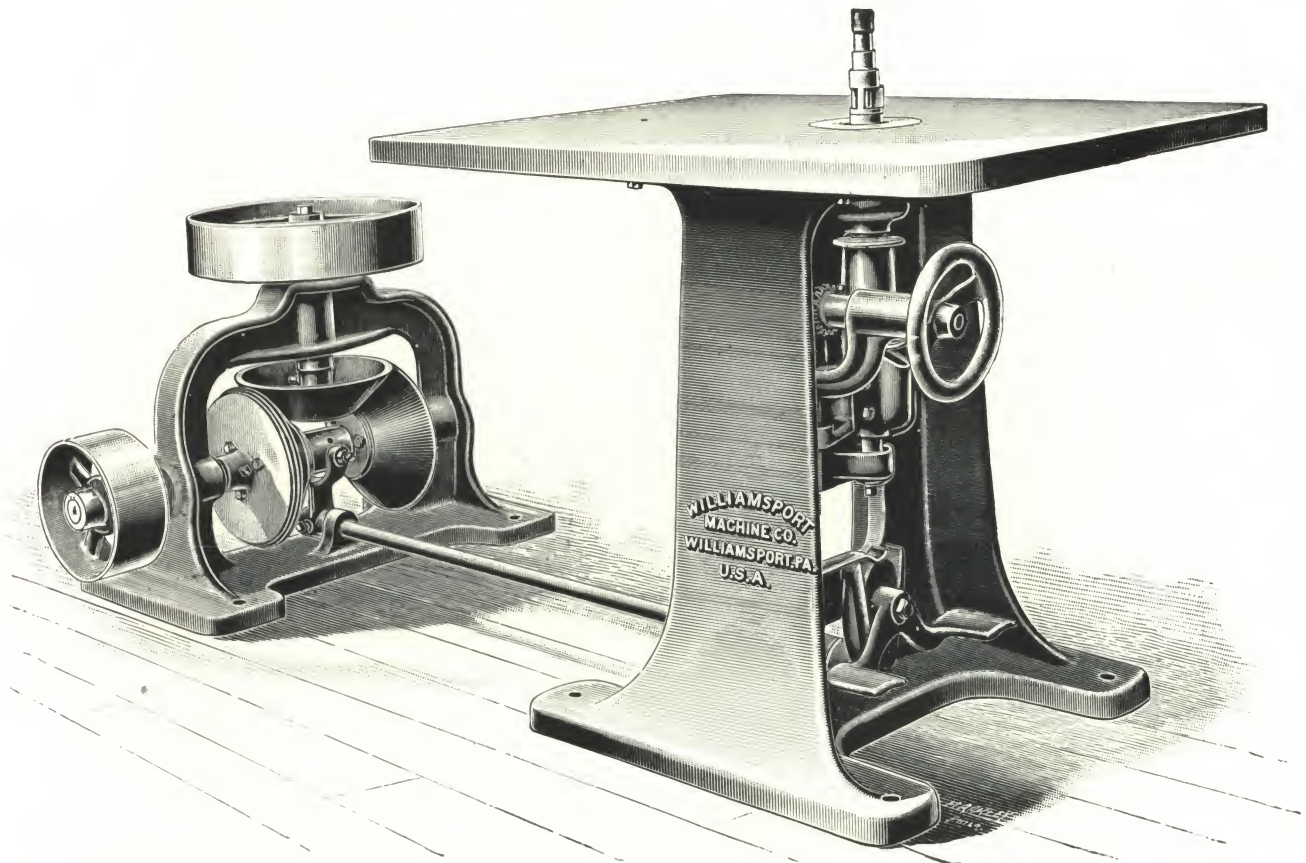
We furnish with each Machine one $\frac{1}{2}$ inch stem and one $\frac{5}{8}$ -inch stem and six collars for each stem—two extra collars for table and one guard collar for top of spindle. This machine is arranged to receive the patent reversible wing cutters which are furnished at extra cost.

STYLE.	T. & L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 306—Single Spindle Reversible Shaper and Counter-shaft.....	10 x 4	700	750	Limbed.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 307.

WILLIAMSPORT MACHINE CO.'S Single Spindle Shaper.



THE above illustration shows our new and greatly improved **Single Spindle Shaper**, with superior friction reverse.

This machine is designed with a view to strength and durability in all its parts, and owing to the quantity and variety of work that can be done on it, is rapidly taking the place of **Double Spindle Shapers** in many mills and factories.

The Steel Spindle, where the collars fit on, is $\frac{5}{8}$ of an inch in diameter, and it, together with its boxes and bearings, can be raised and lowered by the hand wheel at the front of the machine.

The Improved Friction reverse is a special feature applied to this machine, and is made of compressed tar board, expressly for our Shaper.

The Wear is very slight on these frictions, and by their use the troublesome quarter-twist belt is avoided. The reverse is operated by the foot treadle, which is easy of action and free from any jar.

The Table is made of iron, and is 40 inches by 34 inches in size.

The Frame is one solid casting, which gives strength and steadiness to the machine.

The Cutters used can be solid or in sections, and are fitted in collars, thus making a right or left cut in all grains of wood and to a considerable depth.

We furnish with each machine a set of assorted collars of various sizes, and also different sized rings to set in the table for making the various cuts.

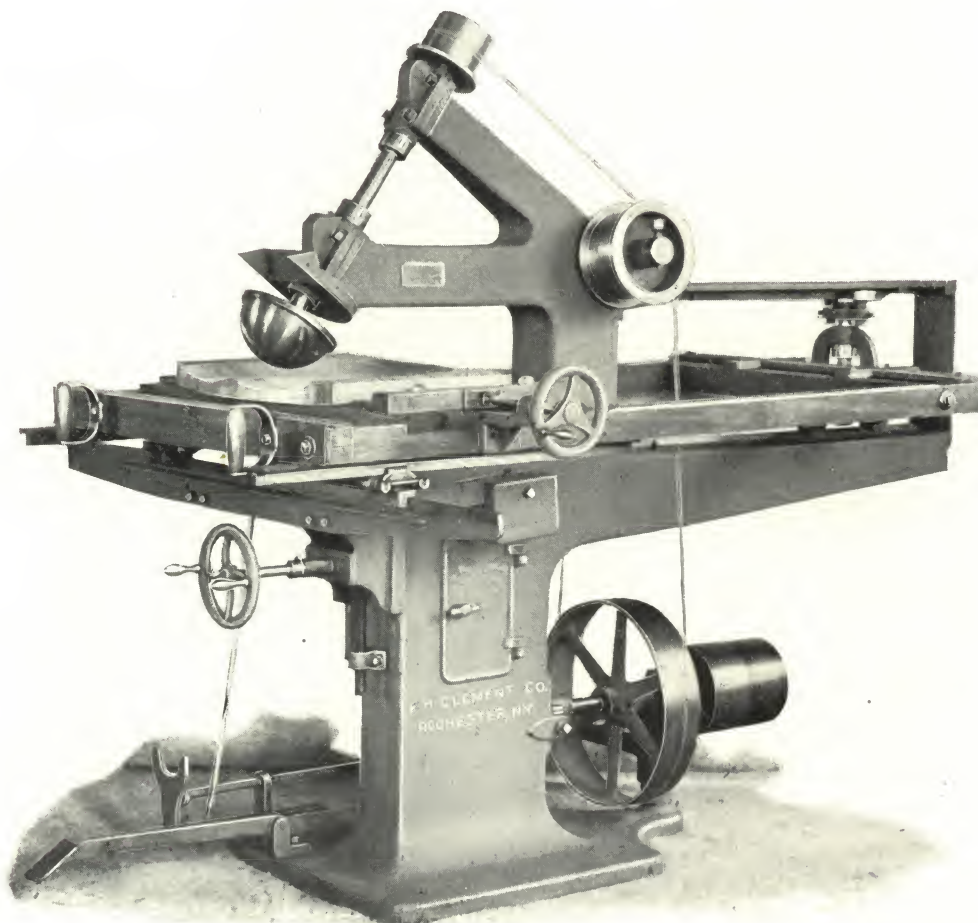
STYLE.	T. & L. Pulleys.	Rev. per Minute.	Weight.	Code Word.
Fig. 307—Single Spindle Shaper and Counter-shaft.....	10 x 4	850	850	Limekiln.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 308.

F. H. CLEMENT CO.'S

Patent Saddle Seat Shaper.



THIS is the only practical, smooth cutting machine for shaping saddle, and other forms of chair seats. **The Knives** have a spiral or shearing cut, ensuring smooth work and the least possible amount of Hand finishing; wooden forms are used which can be easily replaced or altered.

The Traveling Frame is drawn under the cutter head by means of the handles, the depth of the cutter being regulated by the adjustable bracket which carries a follower pin upon which the form rests; the form is attached to the carriage directly under the work.

Clamping Attachments are provided on the carriage to receive any ordinary stock. From 150 to 300 saddle seats may be cut in ten hours and finished so smoothly as to require very little hand labor. More than this has been done under favorable circumstances.

We Furnish one form, one bronze cutter head, 6-in. or 8-in. diameter; one router and guide pin for making forms, and complete counter-shaft attached to machine.

STYLE.	T. & L. Pulleys.	Revs. per Minutes.	H. P. Required.	Weight.	Code Word.
Fig. 308—Patent Saddle Seat Shaper.....	10 x 4¼	750 to 900	3	1200	Limner.

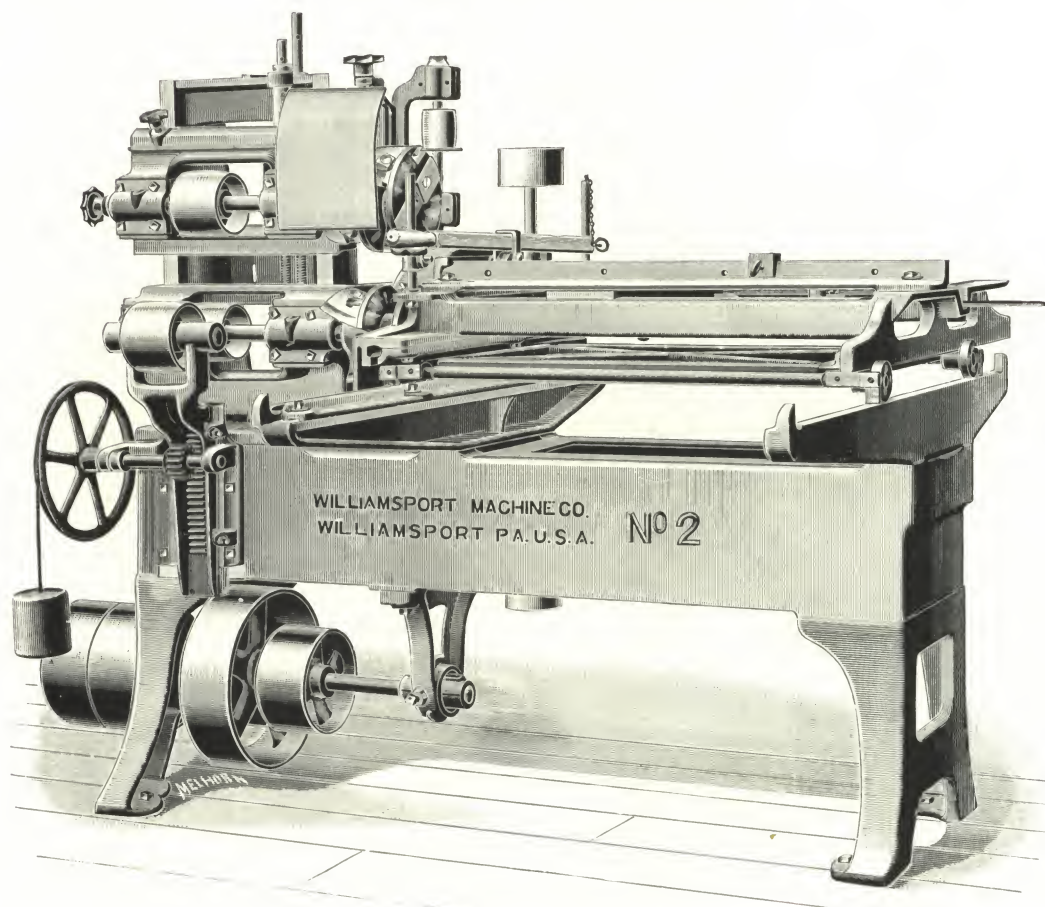
AMERICAN WOOD-WORKING MACHINE CO.

Fig. 309.

WILLIAMSPORT MACHINE CO.'S

New No. 2, Tenoning Machine.

WITH ANTI-FRICTION CARRIAGE.



WE show herewith illustration of the very latest improved **Tenoner for Sash and Door Work**. The machine is of superior design and workmanship, and constructed with a view to having it strong and durable. The working parts of the machine are mounted on a substantial iron bed.

The Yoke for carrying the headstocks has been designed to produce the most accurate results in adjusting to different thicknesses of tenon. **The Frame** for the copes is attached to the headstocks and moves with them.

The Bottom Headstock has an independent adjustment vertically to obtain the desired thickness of tenon. The Top Headstock has an independent adjustment, both lateral and vertical, although the gear for adjusting both headstocks at once is done away with entirely. The movement is obtained by screw entirely, by which both headstocks can be moved up and down together, without in the least changing the thickness of tenon. This is about the only mechanism that will produce quick and accurate changes. **The Copes** are properly connected to the headstocks, and contain the lateral and vertical adjustments within themselves for all range of work.

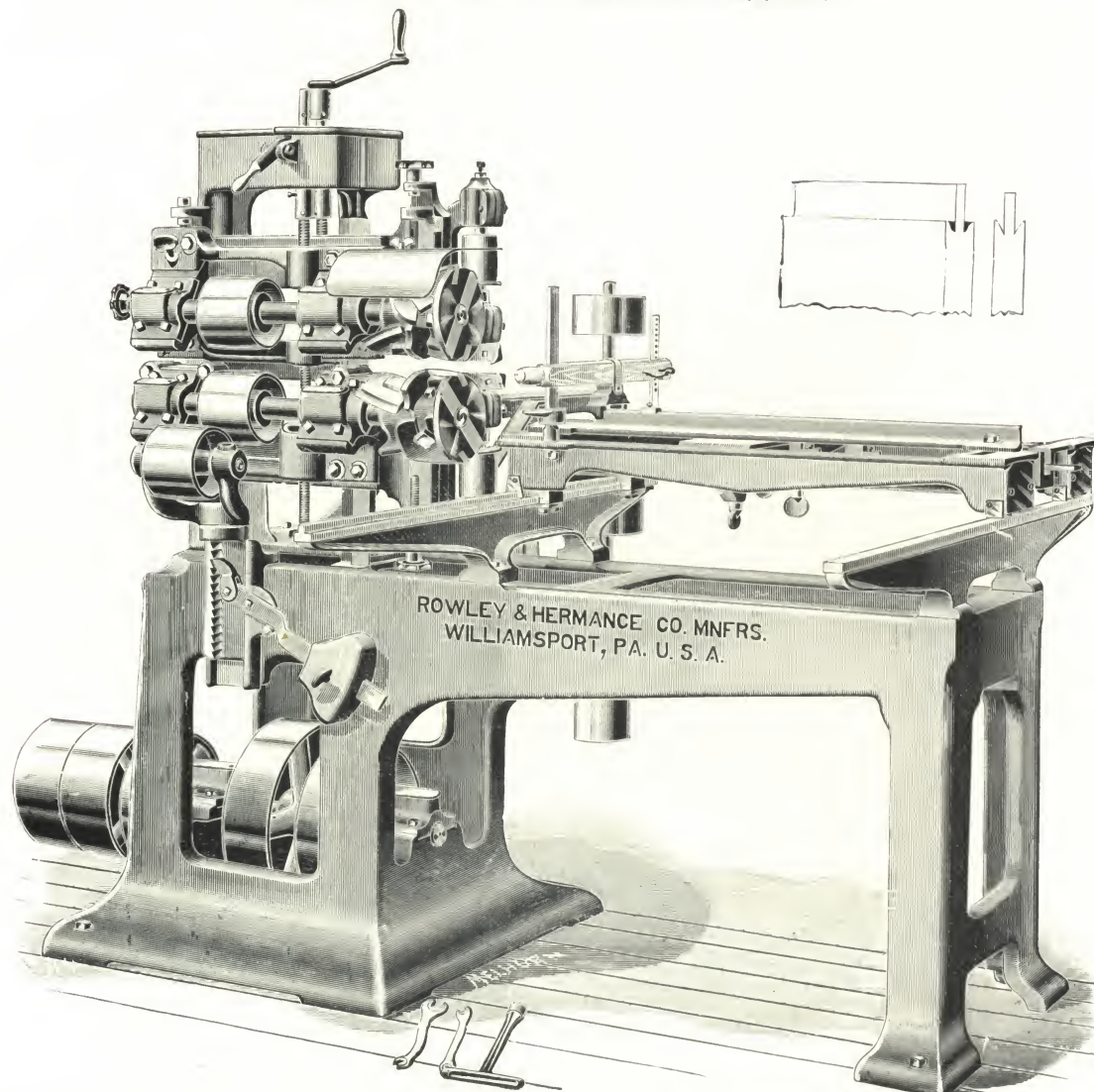
A special feature of this machine is the ease with which the table can be moved forward and back. It is mounted on differential rollers, which run on a perfectly true track. **The Sides** of these rollers are square, and run alongside of an adjustable guide-bar that permits of proper regulation of the path of the rollers, so that the travel of the carriage can always be kept perfectly true. **The Carriage**, with this arrangement, can be moved forward and back with but the slightest perceptible effort. This is a very desirable feature over the old method, where the carriage moved on slides and proved very tiring to the operator. The table is provided with all the usual stops and fixtures. The machine will cut a tenon $6\frac{1}{2}$ inches long at one operation. The carriage has sufficient travel to tenon a rail 22 inches wide. When ordered we can furnish a cut-off attachment that is adjustable to any desired length of tenon, at slight additional cost.

Belts Required: One head belt, 10 ft. x $3\frac{1}{2}$ in.; one cope counter belt, 6 ft. 7 in. x 3 in.; two cope belts, 5 ft. 9 in. x 2 in.

STYLE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word
Fig. 309 —No. 2, Double Heads and Two Copes.....	10 x 4	900	1,400	Limpid.
Fig. 309 A—No. 2, Double Heads and no Copes.....	10 x 4	900	1,400	Lineage.
Fig. 309 B—No. 2, Single Heads and Two Copes.....	10 x 4	900	1,400	Linden.
Fig. 309 C—No. 2, Single Heads and One Cope.....	10 x 4	900	1,400	Linteau.
Fig. 309 D—No. 2, Single Heads and no Copes.....	10 x 4	900	1,400	Lintel."
Fig. 309 E—Cut-off Saw Attachment, extra .....	.....	.....	.....	Lioness.

Fig. 310.

ROWLEY & HERMANCO CO.'S
New Patent Improved No. 2 Tenoning Machine.
 WITH BALL-BEARING ROLLER CARRIAGE.



THIS cut illustrates our new heavy pedestal frame **No. 2 Tenoning Machine**, which is adapted for making perfect tenons for doors, sash and blinds, framing furniture and other like work. **The Frame** is cast in one piece, and the extension, having a support under the outer end, affords perfectly rigid bearings for the carriage to operate upon.

The Carriage is of new design and constructed with bicycle ball-bearing rollers, which overcome all friction. With this improvement we guarantee our carriage to be operated with greater ease than any other carriage used on a machine of this class.

The Machine will cut tenons of any required thickness, and from $\frac{1}{4}$ inch to $6\frac{1}{2}$ inches long, in once passing through the machine; or, by passing through twice, to 9 inches long.

The Headstocks, both upper and lower, have an independent vertical adjustment.

The Top Headstock can be adjusted horizontally to permit the shoulder to be cut at uneven distances from the end. By a simple but effective arrangement the upper and lower heads are instantly connected, and both heads can be raised and lowered without changing the thickness of the tenon in the least.

An entirely new feature in this machine is that the clearance in the heads can be increased without rebabbiting the boxes.

The Cope Heads are attached to the headstocks and adjust simultaneously with them, besides having a separate independent horizontal and vertical adjustment. They are driven with long belts from the vertical counter-shaft attached to the rear of the machine. **The Cutter Heads** are either single, $3\frac{1}{2}$ inches long, or double, $6\frac{1}{2}$ inches long, as may be ordered, and are provided with our patent corrugated spurs. A single belt drives both cutter heads at the same speed. This belt is tightened by a self-adjusting idle pulley, operated by our patent weight lever, with a ratchet and pawl, which keeps the belt always at the proper tension.

There are safety hooks underneath the carriage to prevent its raising and getting into the cutters, a common accident on other machines. The hold-down bar is convenient to the operator, and can be adjusted for different thicknesses of work.

The Fence is adjustable to any angle desired. There is a tool box on the top of machine.

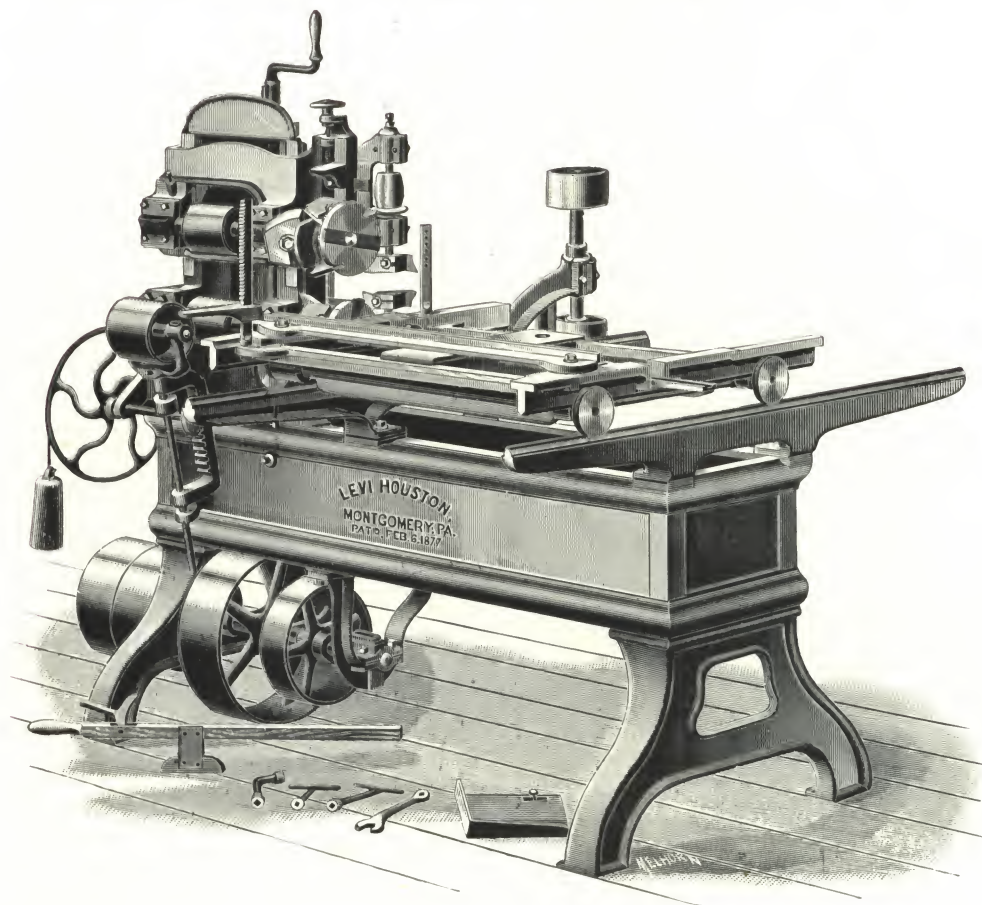
STYLE.	T. and L. Pulleys.	Revs. per Minute.	Cubic Measure.	Weight.	H. P. Required.	Code Word.
Fig. 310 —No. 2, Double Heads and Two Copes.....	$10 \times 4\frac{1}{2}$	900	67	1,600	1 to 3	Lionlike.
Fig. 310 A—No. 2, Double Heads and One Cope.....	$10 \times 4\frac{1}{2}$	900	67	1,600	1 to 3	Liquefy.
Fig. 310 B—No. 2, Double Heads and no Copes.....	$10 \times 4\frac{1}{2}$	900	67	1,600	1 to 3	Liquid.
Fig. 310 C—No. 2, Single Heads and Two Copes.....	$10 \times 4\frac{1}{2}$	900	67	1,600	1 to 3	Liseron.
Fig. 310 D—No. 2, Single Heads and One Cope.....	$10 \times 4\frac{1}{2}$	900	67	1,600	1 to 3	Lisping.
Fig. 310 E—No. 2, Single Heads and no Copes.....	$10 \times 4\frac{1}{2}$	900	67	1,600	1 to 3	List.
Fig. 310 F—Rear Cut-off Attachment, extra.....	.....	.....	.....	.....	.....	Listener.
Fig. 310 G—Front Cut-off Attachment, extra.....	.....	.....	.....	.....	.....	Listless.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 311.

LEVI HOUSTON CO.'S

New Style, No. 2, Tenoning Machine.



THIS cut represents our **Improved Tenoner**, specially adapted for tenoning **Doors, Sash, Blinds and Furniture Work**. It has a strong iron frame, finished in the best manner in every way, provided with small heads capable of running at high speed to do rapid work smoothly without the usual danger of chipping out. It will cut a **tenon from ¼-inch to 7 inches long** at one operation.

The Top Headstock Has Horizontal Adjustment to allow the shoulders on tenon to be cut at uneven distances from the end, and both headstocks can be moved up and down together without changing the thickness of the tenon in the least.

Both Cope Heads adjust with main headstock and each cope head also has independent vertical and horizontal adjustment.

Both Top and Bottom Cutter Heads are run by one belt at the same speed and this belt is provided with a self-operating weighted tightener having vertical and horizontal adjustment.

This machine is provided with our **Combination Roller Table**, greatly facilitating the work both in ease of operation and quantity turned out. In this device the top part of table travels farther in a given time than the under part not requiring the extra long ways.

The Table is perfectly secured to ways with safety gib and stops, so it cannot be thrown from the ways or into the knives. It is perfectly rigid and cannot be thrown or worn out of line. It is provided with a positive hold-down, convenient and instantly operated and by which the shortest piece is firmly held in place.

The Guard and cleaning device prevent chips accumulating on ways.

The Fence is adjustable to any required angle.

The Cut-off Saw Attachment is adjustable by means of a screw to any required length without stopping the machine and is run with the same belt as the heads.

The cutter heads should run 3,500 revolutions per minute.

Belts Required: One belt 11 feet long and 4½ inches wide ; one belt 8½ feet long, 2½ inches wide ; two belts 7½ feet long, 2 inches wide.

STYLE.

	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 311 —No. 2, Double Heads and two Copes	10½ x 5	800	1,200	Litany.
Fig. 311 A—No. 2, Double Heads and no Copes	10½ x 5	800	1,200	Literal.
Fig. 311 B—No. 2, Single Heads and two Copes	10½ x 5	800	1,200	Lithiate.
Fig. 311 C—No. 2, Single Heads and no Copes	10½ x 5	800	1,200	Litmus.
Fig. 311 D—No. 2, Single Heads and one Cope	10½ x 5	800	1,200	Litotes.
Fig. 311 E—Cut-off Saw Attachment, extra .....	.....	.....	.....	Litter.

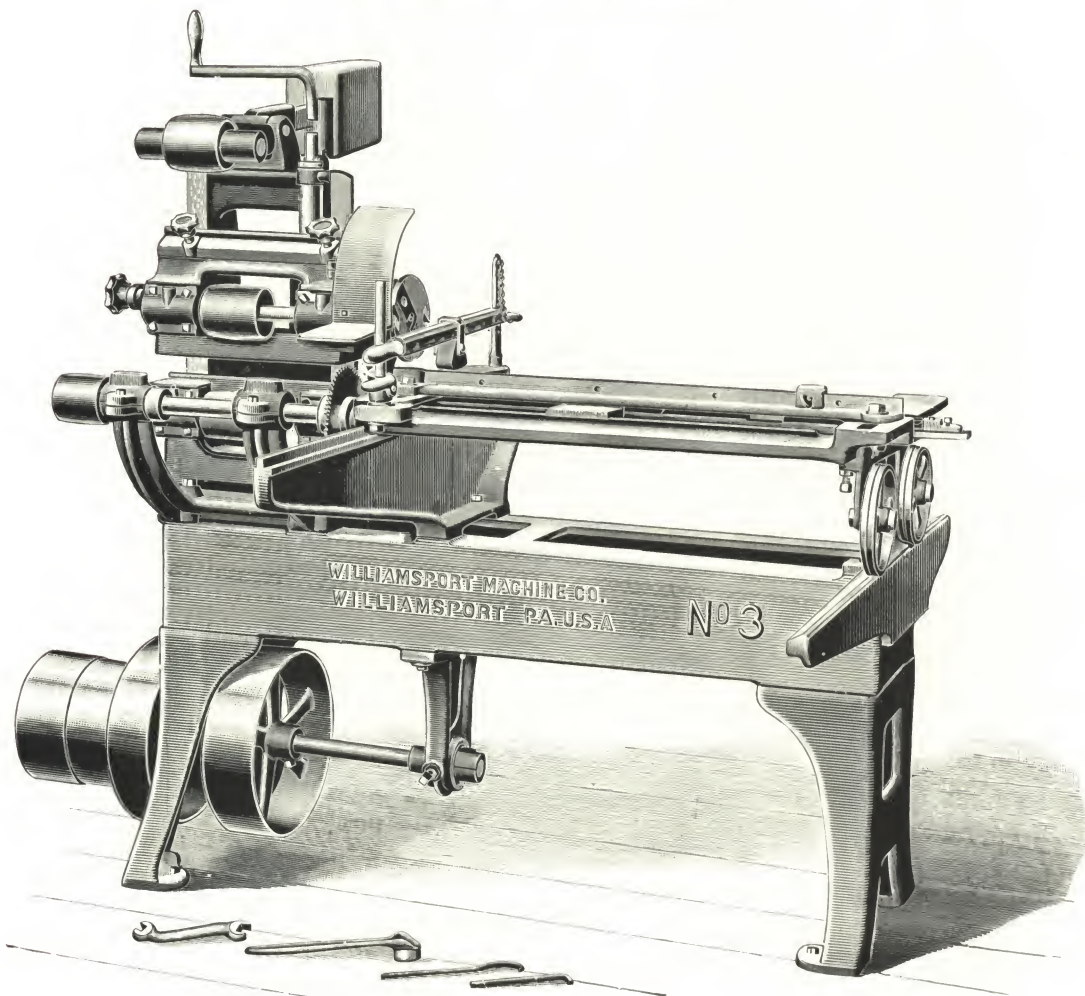
AMERICAN WOOD-WORKING MACHINE CO.

Fig. 312.

WILLIAMSPORT MACHINE CO.'S

New No. 3, Cabinet Tenoner.

With Anti-Friction Carriage.



WE show herewith an illustration of the very **latest improved** tenoner for sash, blind and furniture work.

A special feature of this machine is the ease with which the table can be moved on differential rollers, which run on a perfectly true track.

The Sides of these rollers are square and run alongside of an adjustable guide-bar that permits of proper regulation of the path of the rollers so that the travel of the carriage can always be kept perfectly true. The carriage, with this arrangement, can be moved forward and back with but the slightest perceptible effort.

The Machine will cut a tenon $3\frac{1}{2}$ inches long at one operation, and by passing the work through twice, the tenon can be increased to $5\frac{1}{2}$ inches long. When wanted, we can, at a small additional cost, furnish a cut-off attachment which is adjustable to any length of tenon desired.

The Carriage has sufficient travel to tenon a rail 14 inches wide.

Belts Required: One head belt 9 feet 8 inches by $3\frac{1}{2}$ inches; one cope counter belt 6 feet 7 inches by 3 inches; two cope belts 5 feet 9 inches by 2 inches; one belt for cut-off saw 7 feet 2 inches by 3 inches.

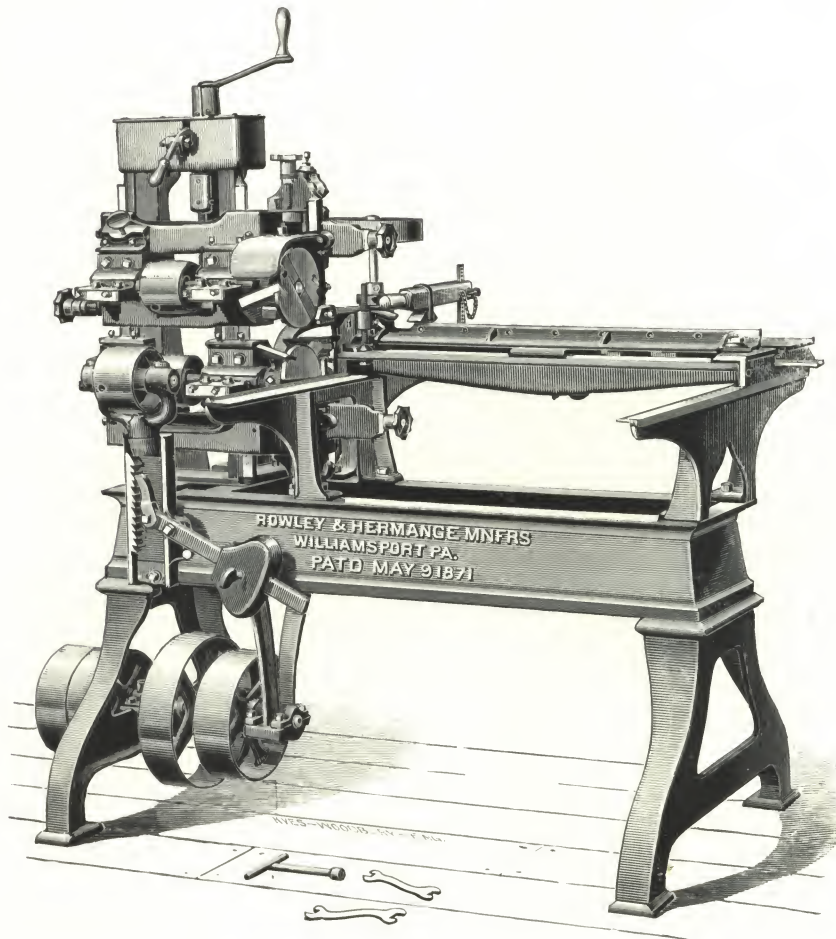
STYLE.	T. and I. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 312 —No. 3, Single Heads and two Copes.....	10 x 4	900	1,000	Liturg.
Fig. 312 A—No. 3, Single Heads and one Cope.....	10 x 4	900	1,000	Livelong.
Fig. 312 B—No. 3, Single Heads and no Cope.....	10 x 4	900	1,000	Livery.
Fig. 312 C—Cut-off Saw Attachment, extra.....	.....	.....	.....	Loafer.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 313.

ROWLEY & HERMANCE CO.'S

New Patent Improved No. 3, Tenoning Machine.



THIS Machine is adapted for **Tenoning Sash, Blinds, Furniture, Spokes** or other light work. It will cut tenons of any required thickness up to three inches, and from $\frac{1}{8}$ inch to $3\frac{1}{4}$ inches long in once passing through, and by passing through twice, up to $5\frac{3}{4}$ inches long.

Either Headstock can be moved up or down independently.

The Top Headstock can be adjusted horizontally, to permit the shoulder to be cut at uneven distances from the end. By a simple but effective arrangement the upper and lower heads are instantly connected, and both heads can be raised and lowered without changing the thickness of tenon in the least.

The Cutter Heads are $3\frac{1}{4}$ inches in length, and are provided with our patent **Corrugated Spurs**.

A single belt drives both cutter heads at same speed. This belt is tightened by a self-adjusting idler pulley, operated by a weighted lever, with ratchet and pawl, which keeps the belt always at proper tension.

The Copes are attached to main headstocks and move vertically with them. Each has also an independent horizontal and vertical adjustment. They are driven from the vertical counter-shaft attached to the rear of machine.

The Hold-Down Bar is convenient to operator and can be adjusted for different thicknesses of work. The fence is adjustable to any angle desired.

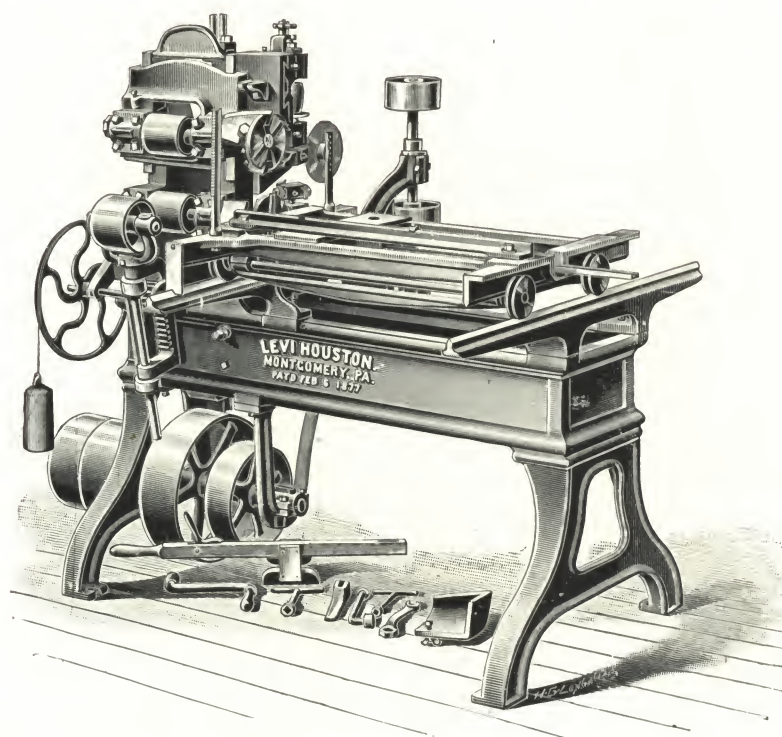
STYLE.	T. and L. Pulleys.	Revs. per Minute.	Cubic Measurement.	H. P. Required.	Weight.	Code Word.
Fig. 313 —No. 3, Single Heads and two Copes	9 x 3	900	58	1 to 2	1,200	Loamy.
Fig. 313 A—No. 3, Single Heads and one Cope	9 x 3	900	58	1 to 2	1,200	Lobated.
Fig. 313 B—No. 3, Single Heads and no copes	9 x 3	900	58	1 to 2	1,200	Lobby.
Fig. 313 C—Rear Cut-off Saw Attachment, extra .....	.....	.....	.....	.....	.....	Lobbing.
Fig. 313 D—Front Cut-off Saw Attachment, extra.....	.....	.....	.....	.....	.....	Lobworm.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 314.

LEVI HOUSTON CO.'S

New Style No. 3, Tenoning Machine.



THE above engraving represents our **Improved No. 3 Tenoning Machine**, which has a very substantial iron frame and is finished in the best manner. It is used principally for sash and blinds.

The Cutter Heads are made small so that they can be run at great speed.

The Top Headstock is adjustable up and down and in and out, and both headstocks can be moved up and down together without changing the thickness of the tenon in the least.

The Bottom Headstock and the main standard are in one piece, and are gibbed to the inside of the frame, and raised and lowered by a screw.

Both top and bottom cutter heads are run by one belt at the same speed, and this belt is provided with a self-operating weighted tightener having vertical and horizontal adjustment.

This machine is provided with our **Combination Roller Table**, greatly facilitating the work both in ease of operation and quantity turned out. In this device the top part of the table travels farther in a given time than the under part not requiring the extra long ways.

The Table is perfectly secured to ways with safety gib and stops, so it cannot be thrown from the ways or into the knives. It is perfectly rigid and cannot be thrown or worn out of line. It is provided with a positive hold-down, convenient and instantly operated, and by which the shortest piece is firmly held in place.

The Guard and cleaning device prevent chips accumulating on ways.

The Fence is adjustable to any required angle. **The Cut-off Attachment** is adjustable to any length tenon desired (by means of a screw) without stopping, and is run with the same belt as the heads.

Belts Required: One belt 10 feet long, 3 inches wide; one belt 7 feet 4 inches long, 2½ inches wide; one belt 6 feet 2 inches long, 2 inches wide; one belt 6 feet 2 inches long, 2 inches wide.

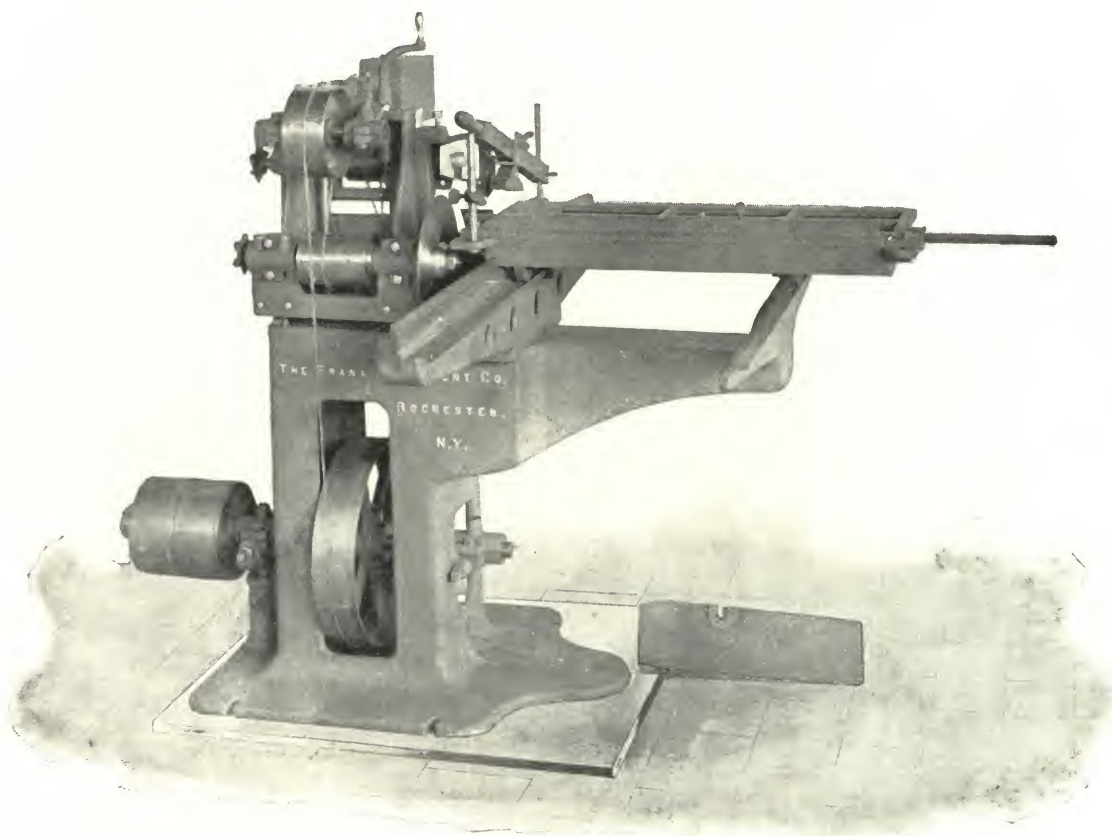
STYLE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 314 —No. 3, Single Heads and Two Copes.....	10 x 4	900	900	Lobelet.
Fig. 314 A—No. 3, Single Heads and One Cope	10 x 4	900	900	Lobelia.
Fig. 314 B—No. 3, Single Heads and no Copes	10 x 4	900	900	Lobster.
Fig. 314 C—Cut-off Saw Attachment, extra .....	.....	.....	.....	Locality.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 315.

F. H. CLEMENT CO.'S

Improved Cabinet Tenoning Machine.



ONE of the main features of this machine is that the cut-off saw operates first on the work, whereby the tenons are left smooth and clean at the ends, and ready to enter the mortises freely without danger of pushing the glue ahead of them.

The work is all done on the forward run of the table and this necessitates a special arrangement of the parts with reference to the driving mechanism, which cannot be had in the ordinary form of sash or door tenoners.

The Frame is cast in one piece and is compact and strong, allowing access to all parts for oiling and adjustment. The ways are bolted firmly to it and are so shaped as to resist springing in any direction.

The Main Arbors are of steel and are belted between the journals and are adjusted by screws on V slides which have carefully fitted gibs.

The Cutter Heads are very carefully made and balanced, and the knives have a shearing cut. The upper head has an endwise adjustment by a screw, and both heads may be raised and lowered together, or the lower one separately.

The Saw Arbor runs in a yoke frame which has an endwise adjustment of three inches on gibbed ways with screw and finger wheel. A ten-inch cut-off saw is usually furnished.

All Arbor Boxes are carefully scraped to an accurate fit on the journals, so that the machine can be started off without heating or "wearing down" to a bearing.

The Table runs on four friction rollers with one square slide with adjustable side gib, and it is also gibbed under, so that it cannot lift by the action of the lower cutter. The movement of the table is thus very easy, without any slack on the ways. The tracks are protected from shavings and saw dust.

The Stop Gauge is very simple and effective, and will take work from 3½ inches long and upward and to 16 inches wide, and the extension bar may be made to take 6 feet if ordered. The clamp lever is adjustable to different thicknesses and widths of work. The tightener keeps a constant tension on the driving belt for any position of the cutters. As usually made, the heads cut 3 inches wide, but they can be made wider if necessary.

Hundreds of these machines are in use in leading cabinet works. The workmanship is *the best*.

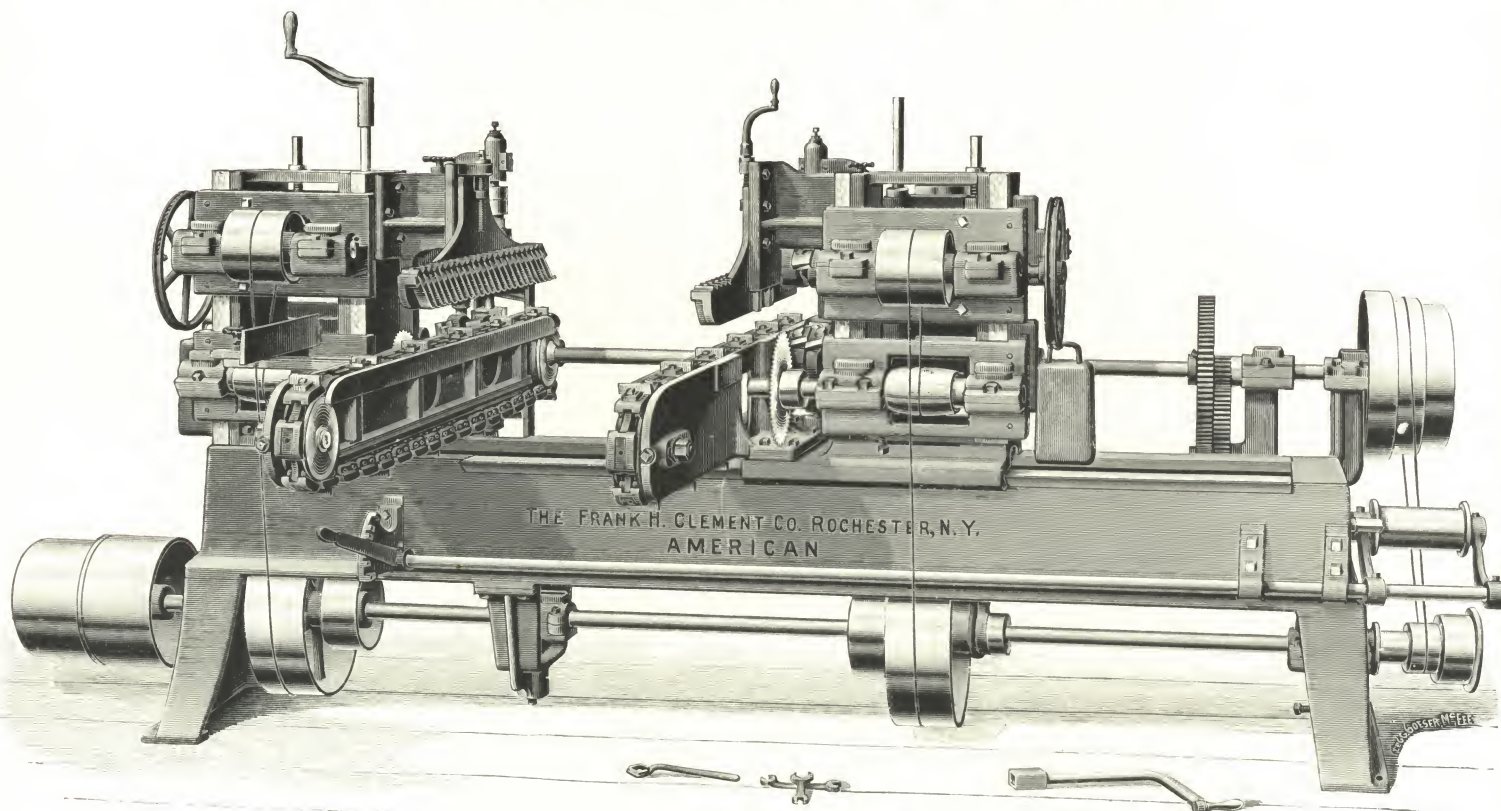
STYLE.	T. and L. Pulleys.	Revs. per Minute.	H. P. Required.	Weight.	Code Word.
Fig. 315 —Cabinet Tenoner with two Copes	8 x 3¾	900	2	850	Located.
Fig. 315 A—Cabinet Tenoner with one Cope.....	8 x 3¾	900	to 3	to 1,050	Location.
Fig. 315 B—Cut-off Saw Attachment, extra .....	.....	.....	.....	.....	Lockless.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 316.

F. H. CLEMENT CO.'S

New Double End Tenoning Machine.



WITH OUTSIDE BEARING ON COUNTER-SHAFT.

D OUBLE Tenoning Machines with automatic continuous feed have become a necessity in all large, well-ordered sash, door, car, furniture and similar factories, and our illustration shows a greatly improved machine of this kind which will be appreciated by users.

The Frame is unusually deep and heavy, and is flanged so as not to spring sidewise, a common fault with such beds; and it has three points of bearing on the floor, thus preventing twisting.

The Head Blocks are arranged to carry saw arbors in front and the tenoning spindles at the rear, so that the stock is cut off before it is tenoned. One head block adjusts by means of a screw and crank along the bed on gibbed ways which are scraped to an accurate bearing.

The Arbors are all of hard steel, and run in self-oiling boxes with return channels. The vertical adjustment of the tenon heads is obtained by screws and hand cranks, and the upper arbors have also a longitudinal adjustment with screws.

The Feed Chains are of steel and bronze, very carefully milled, and drilled to gauges, and the driving sprockets are milled to correspond, so that the chains run smoothly from the start; the idler sprockets are adjustable to take up wear.

The Feed Works are operated from the counter-shaft through gears and cone pulleys, by means of which a variation of speed can be had from 9 feet to 18 feet per minute; and by means of the hand lever in front of the machine, the feed can be stopped or started instantly.

The Pressure Bars are adjustable vertically to different thicknesses of stock, and elastic pressure is obtained by flat steel springs set close together along the lower edge, and polished where they come in contact with the lumber; thus narrow stuff is held down firmly.

An End Stop or fence made adjustable longitudinally is provided in front of the cut-off saws, to guide the stock accurately on the chains.

The Capacity of the machine is from 2 inches to 24 inches wide or more if ordered, and from $\frac{1}{4}$ inch to 4 inches thick; and the head blocks can be set to tenon from 6 inches to 4 feet 9 inches between shoulders. This makes a good double cutting-off machine independent of the tenoning, the cut-off saws being adjustable from $6\frac{1}{2}$ inches to 5 feet 6 inches; the tenon arbors can be adjusted out of the way when thus used. By special order the machine may be made to tenon $4\frac{3}{4}$ inches between shoulders.

The Tenon Heads shown are known as "single," 3 inches wide, but "double" heads can be furnished, cutting to 7 inches wide; the spurs on the heads and the extension of the driving lugs on the chain prevents splintering at the edge of the lumber.

Tightener Pulleys take up the slack in the main driving belts by means of weights on sheaves, which operate gears and racks on the arbor boxes.

The Workmanship is excellent in every detail, and a great deal of pains has been taken in the preparation of the patterns and special tools for fitting up the small parts.

The Counter-Shaft is of turned steel and has four self-oiling bearings on the frame and one on an outside floor hanger.

	STYLE.	T. and L. Pulleys.	Revs. per Minute.	H. P. Required.	Weight.	Code Word.
Fig. 316	—Single Heads and Cut-off Saws, no Copes.....	12 x $7\frac{1}{4}$	850	6 to 8	4,000	Locular.
Fig. 316 A—	“ “ “ “ “ Lower Copes	12 x $7\frac{1}{4}$	850	6 to 8	to	Loftiness.
Fig. 316 B—	“ “ “ “ “ Both Copes.....	12 x $7\frac{1}{4}$	850	6 to 8	4,500	Lodestone.
Fig. 316 C—	Double Heads, extra.....	.....	.....	.....	.....	Lodgeable.

Fig. 317.

ROWLEY & HERMANCO CO.'S

Improved Patent Self-Feed Slat Tenoner.

THIS cut illustrates our **Improved Machine for Tenoning** slats for both outside and inside blinds.

Owing to the constant wear of the side cutters used in making blind slats, there is more or less variation in the width of the slats, and when the Slat Tenoner is set for one width some of the slats will be so wide they will bind, making it very difficult to feed them; while others will be so loose they will not fill the holder, in which case the tenons will not be cut round. This is a common fault with all other makes of slat tenoners.

To overcome this objection we have invented a holder with **self-tightening and self-releasing jaws**. These jaws hold the slat firmly while it is being tenoned and release it when the tenon is completed, making each tenon round and true.

These Jaws will allow a variation in width of slats of $\frac{1}{8}$ of an inch. This is an entirely new feature and patented.

It will tenon slats from $\frac{7}{8}$ of an inch to $2\frac{1}{16}$ inches in width, and from $1\frac{1}{2}$ inches to 24 inches in length.

The device for holding the slats is **self-centering**, thus always making the tenon in the center of the width of the slat, but it is so arranged that the tenon can be placed nearer one edge if it is desired.

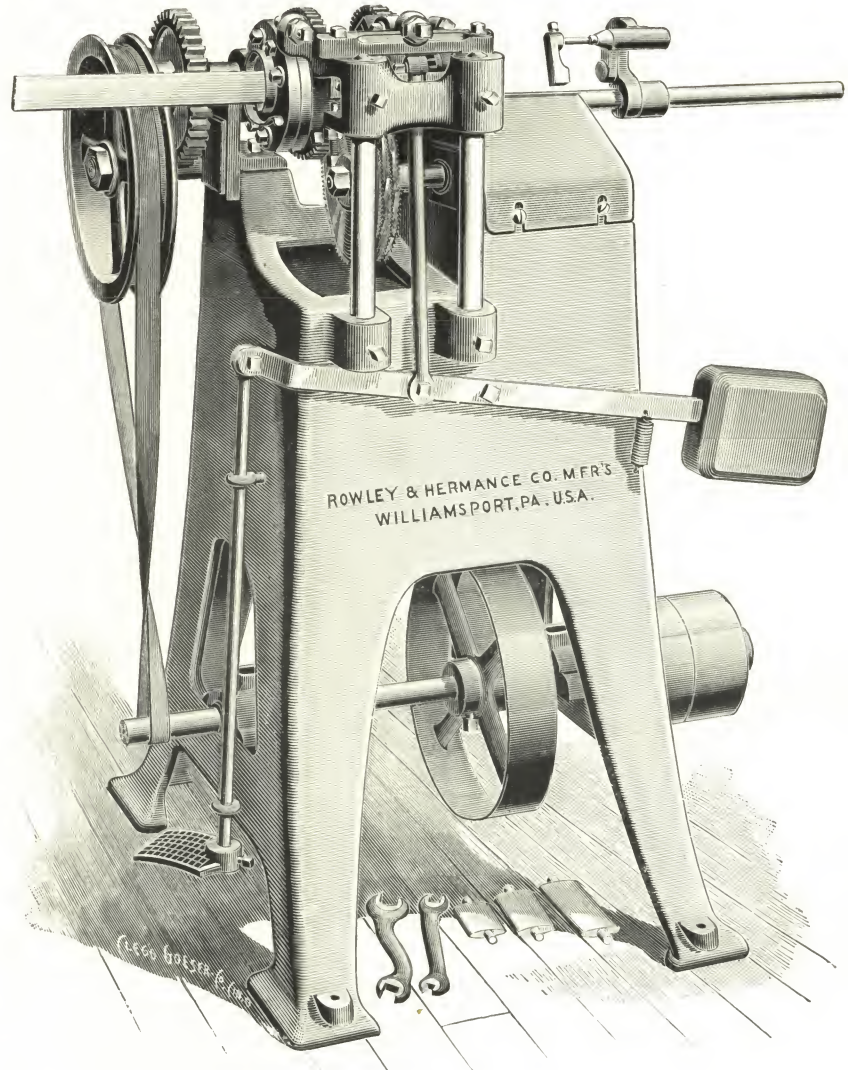
The Slat is firmly held while it is being cut, and is not released till the tenon has been completed and the slat cut off.

The Slat is moved to the saws and two tenons cut and divided by one motion of the foot treadle, thus performing the operation quickly and accurately in the shortest possible time.

The stop which determines the length of the slat is simple and positive, and admits of no variation in the length of the slats.

The Saws being easy of access, can be quickly taken out when they become dull.

As there are no delicate or complicated parts to get out of repair, the machine can be run by a boy.



Patented July 18, 1893.

	Tight and Loose Pulleys.	Revolutions per Minute.	Cubic Measurement.	Approximate Weight.	Average H. P. Required.	Code Word.
Fig. 317—Self-Feed Slat Tenoner.....	6 x 2½	900	18	400	1	Locus.

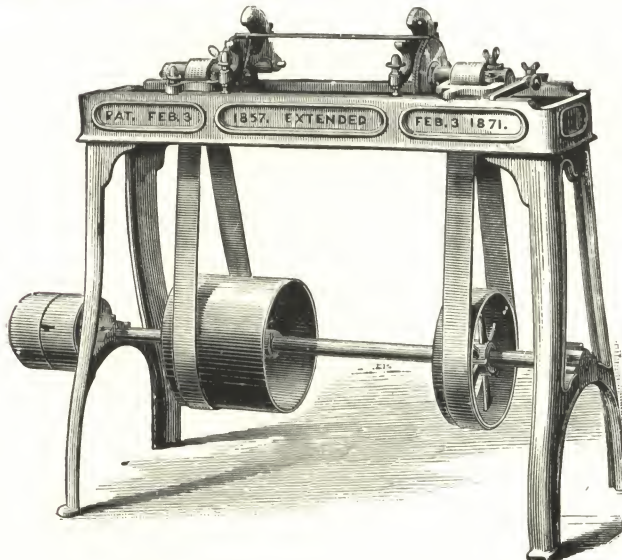


Fig 318.

ROWLEY & HERMANCO CO.'S

Improved Ellis Patent
Blind Slat Tenoner.

THE best, simplest and most perfect machine for tenoning slats for outside blinds. It is always ready for use, and has a working capacity of 25,000 slats per day.

The wear of the brass discs has always been an objection. We have entirely overcome this by an improvement which is found on no other machine. The iron circles holding the discs are made in two parts, and are adjustable to take up the wear.

It is quickly changed to work long or short slats, and the size of tenon adjusted to suit different widths and sizes.

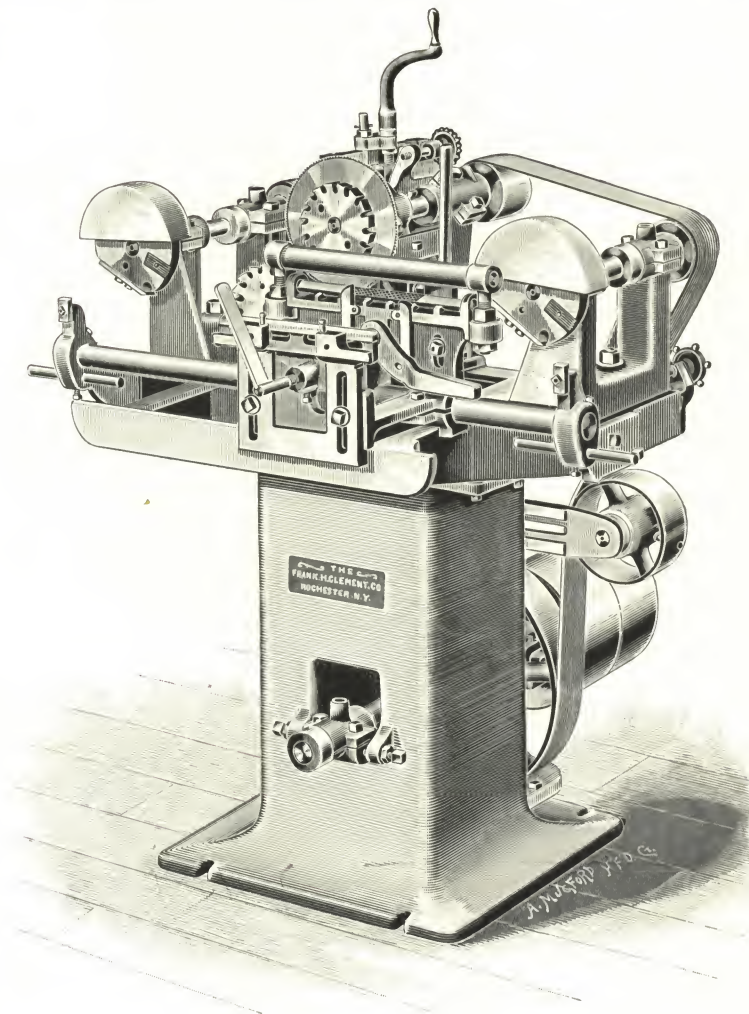
	Tight and Loose Pulleys.	Revs. per Minute.	Cubic Measurement.	Approximate Weight.	Average H. P. Required.	Code Word.
Fig. 318.....	6 x 2½	600	24	250	½ to 1	Lodgers.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 319.

F. H. CLEMENT CO.'S

New Chair Back Tenon Machine.



THE engraving shows the latest improved machine of this kind, and one having greater capacity than any previous design. Many new styles of chairs require backs six to ten inches wide, and therefore the regular patterns of Back Tenoners have not been equal to such work.

Two Sizes are made from the above design: No. 1, which is our regular stock size, taking backs from 1½ inch to 7 inches wide; No. 2, taking backs from 2 inches to 12 inches wide.

The Frame is cast in one piece and carefully designed for strength and rigidity. There are two tenoning heads, one with cut-off saw and two relishing heads. These are all driven by an endless belt furnished with the machine.

An Adjustable Binder with self-oiling loose pulley is arranged to take up the slack of the belt when required.

Three Cutter-Head Arbors are adjustable endwise by shouldered screws and finger wheels. These arbors are hard steel with ground journals, and the heads are attached with a thread. The boxes are carefully scraped to the journals.

The Carriage has an adjustable eccentric clamp and a self-adjusting bed underneath, which accommodates itself to any back. There is also an automatic stop which prevents relishing either edge, and the adjustable end stops can be set to prevent relishing altogether. A reversible catch allows relishing on both edges when required. All the parts are adjustable for different thicknesses, lengths and shapes of backs.

The Tenoning Heads are of solid steel, of fine quality and the teeth have a shearing cut ensuring smooth work. The arbor saddles have a vertical adjustment by a screw and crank, shown in cut, and accurate adjustments may be instantly made to thickness or shoulder line. These heads are usually made ⅝ inch thick and square on the face, but can be made any shape or thickness to order.

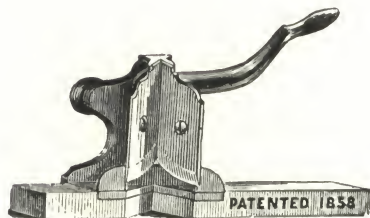
The Counter-Shaft is attached by self-adjusting boxes. The loose pulley has our improved self-oiling separable bush.

STYLE.	T. and L. Pulleys	Revs. per Minute.	H. P. Required.	Weight.	Code Word.
Fig. 319 —No. 1, Four Heads and Cut-off Saw.....	10 x 4¼	900	3	1,000 to 1,100	Logic.
Fig. 319 A—No. 2, Four Heads and Cut-off Saw.....	10 x 4¼	900	3	1,000 to 1,100	Lofty.

AMERICAN WOOD-WORKING MACHINE CO.

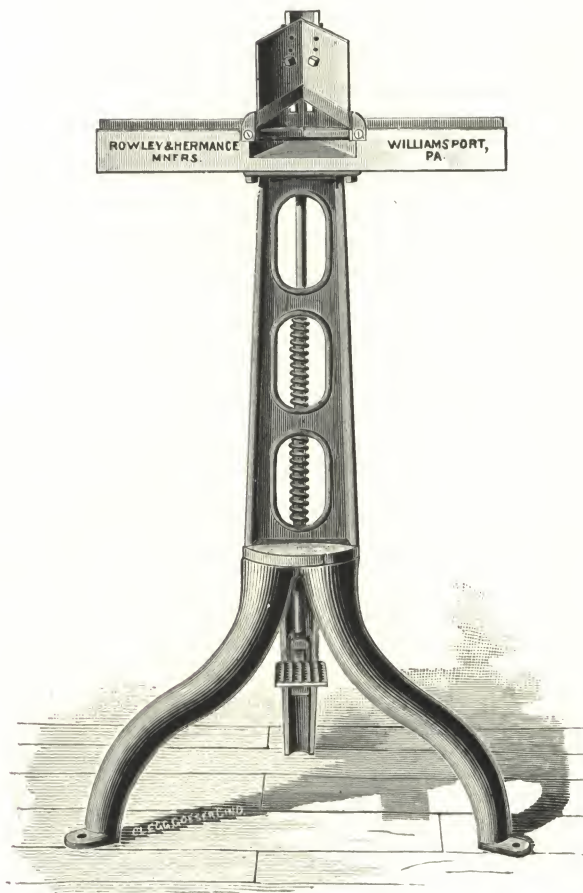
Fig. 320.

ROWLEY & HERMANCO CO.'S Hand Miter Machine.

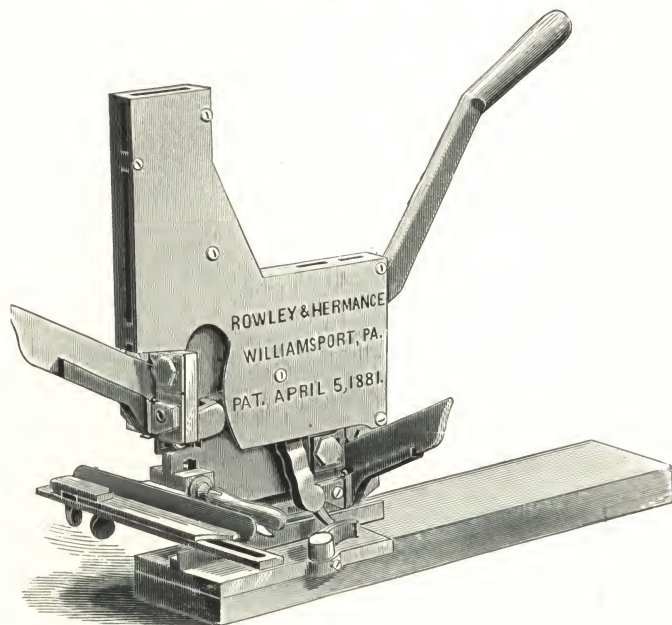


	SIZE.	Weight.	Code Word.
Fig. 320	—To cut $2\frac{1}{4}$ inches wide.....	30	Logan.
Fig. 320 A	—To cut 3 inches wide	45	Lonely.

Fig. 322.



ROWLEY & HERMANCO CO.'S Double Blind Wirer.



	STYLE.	Code Word.
Fig. 321	—Double Blind Wirer.....	Looby.
Fig. 321 A	—Single Blind Wirer	Lordly.

Fig. 322.

ROWLEY & HERMANCO CO.'S Common Foot Miter Machine.

	SIZE.	Weight.	Code Word.
Fig. 322	—To cut up to $2\frac{1}{4}$ inches wide....	120	Lotion.
Fig. 322 A	—To cut up to 3 inches wide....	140	Lovely.
Fig. 322 B	—To cut up to 4 inches wide....	170	Loving.

Fig. 323.

ROWLEY & HERMANCO CO.'S Large Foot Miter Machine.

For Rabbeted Mouldings and Picture Frames.

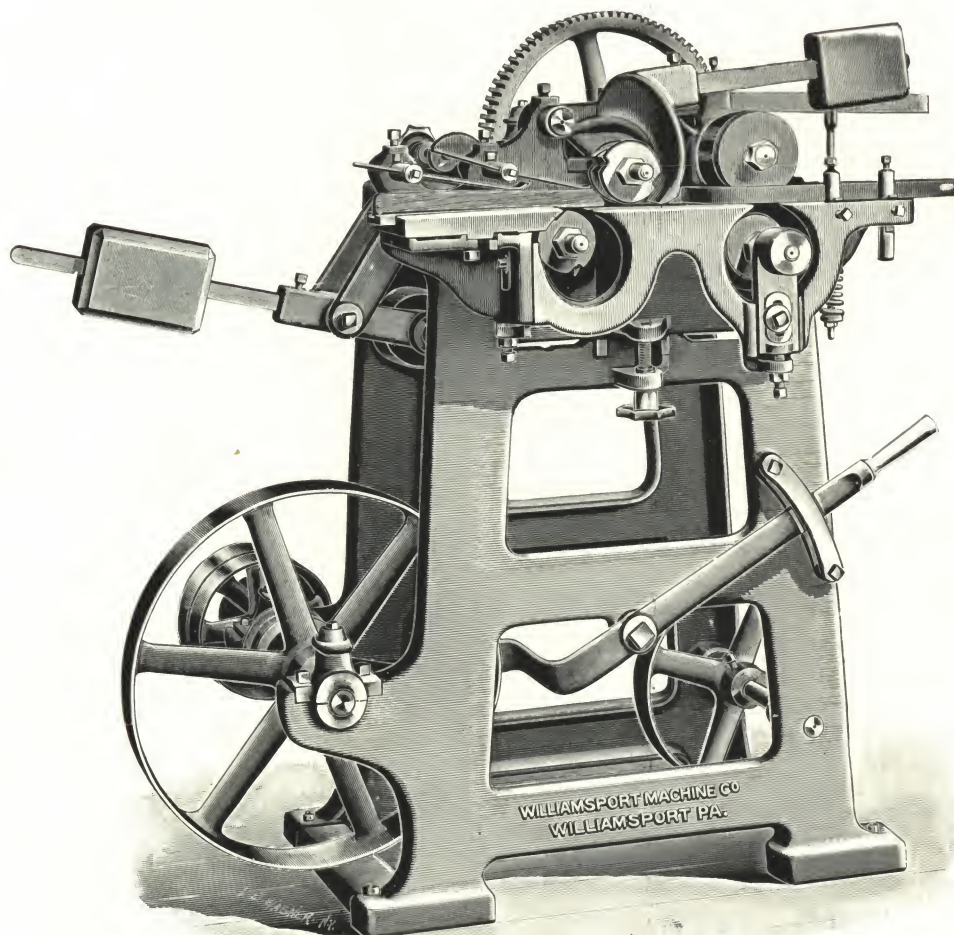
This machine has our attachment to support the rabbet, which prevents the knife from splintering the wood.

	SIZE.	Weight.	Code Word.
Fig. 323	—To cut up to $2\frac{1}{4}$ inches wide	130	Lozenge.
Fig. 323 A	—To cut up to 3 inches wide	160	Luckily.
Fig. 323 B	—To cut up to 4 inches wide	190	Lucre.

AMERICAN WOOD-WORKING MACHINE CO.

Fig. 324.

WILLIAMSPORT MACHINE CO.'S New Blind Slat Planer.



THE illustration shows a new **Blind Slat Planer**, the frame of which is one solid casting.

Only Two Heads are required, top and bottom, driven by one belt. Circular milled cutters are used that are very durable and retain their shape until worn out. They will not chip out in working cross-grained stock, and a slat can be finished on $\frac{1}{2}$ of an inch, by passing through the machine once.

Top and Bottom Paper Feed Rolls are used, both being driven, making a strong and steady feed. Necessary chip-breakers and pressure shoes are provided, and with the thorough tests the machine has had, we are confident it will do the work in the most satisfactory manner.

BELTING REQUIRED.

One Driving Belt, 8 feet 1 inch by $2\frac{1}{2}$ inches wide.

One Feed Belt, 5 feet 4 inches by 2 inches wide.

One Feed Belt, 6 feet 4 inches by $1\frac{1}{2}$ inch wide.

FLOOR SPACE.	T. and L. Pulleys.	Revs. per Minute.	Weight.	Code Word.
Fig. 324—38 inches x 32 inches	8 x 3	700	700	Lumbago.

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